AIB Consolidated Standards for

BEVERAGE PLANTS

INTERNATIONAL

ISBN 1-880877-55-4

Contents

The AIB Standards

The *AIB Consolidated Standards for Beverage Plants* were published as a tool to permit beverage (alcoholic, non-alcoholic, water, carbonated, non carbonated and juices) processors to evaluate the food safety risks within their operations and to determine levels of compliance with the criteria in the Standards. These Standards contain the criteria and rating method used to assign a numerical score (rating) to the plant. These criteria are derived from the following good management principles: The U.S. Federal Food Drug and Cosmetic Act (1938); Good Manufacturing Practices, CFR Title 21, Part 110 (1986); U.S. Military Sanitary Standards; the U.S. Federal Insecticide, Fungicide, and Rodenticide Act; EU Regulation No. 178/2002 and EU Regulation No. 852/2004; The Food Safety Act 1990 (Amendment) Regulations (2004) (UK); General Food Regulations 2004 (UK); and Codex Alimentarius Commission Food Hygiene - Basic Texts (1999).

This document and scoring procedure should be used by the plant management team to perform a self-assessment of the plant's compliance to the AIB Standards. The rating protocol should be used to assign a numerical score to the plant inspection and evaluate the overall effectiveness of the food safety programs.

Section I
Adequacy of Food Safety Program

This section outlines management's responsibility for formally documented programs necessary to establish and maintain an effective food safety program. These programs are detailed in sections II through V of this document. Successfully implementing these programs will reduce the potential for food contamination in the plant. The effectiveness of the food safety program is evaluated by the self-inspection and corrective action process which documents the maintenance and continuous improvement of the required programs for food safety.

Section II
Pest Control

This section describes elements of a formalized, written food adulteration prevention program required to conform with these consolidated Standards. It defines several types of programs, lists required records, and gives specific procedures to follow to prevent food adulteration by pests, pest evidence, or pesticides.

Section III
Operational Methods and Personnel Practices

This section lists programs and techniques to protect food from adulteration during storage and manufacturing. It addresses receiving and storing raw materials; transferring and handling ingredients; operational appearance; and operational, delivery, and personnel practices.

Section IV
Maintenance for Food Safety

This section requires the plant to have an implemented preventive maintenance program; maintenance work order system; and sanitary/hygienic design criteria for the building, equipment, and utensils to prevent food contamination from these sources.

Section V
Cleaning Practices

This section contains requirements for scheduled cleaning of the building and grounds, equipment, utensils, and maintenance cleaning associated with electrical and mechanical systems.

Confidentiality

All information obtained by AIB International during the establishment/plant inspection will be treated as confidential between AIB International and the client. The inspection report will be provided to the client under an AIB assigned code number. Except as required by law, AIB International will not release any information or report of the inspection to a third party without written authorization from the client.

Using the Standards for Self-Inspection: The Inspection Team

The plant management **shall** inspect all of the facility at least once each month. A formal report **shall** be made of the inspection observations. The inspection team should consist of the Plant Manager and a representative of each of the following departments: production, maintenance, quality control, sanitation/hygiene, receiving, and warehousing. The purpose of the team concept is to have team members with different levels of education, experience, and accountability working together to focus on food safety concerns during the audit. This will have several benefits:

1. The team is a highly visible representation of management's commitment to food safety issues. It stresses that this activity is important and an integral function of the plant's responsibility to produce a safe product.
2. The team helps cross-train members to look for and react to food safety issues. It also helps the team focus on how the management system, plant policy, and employee training can and do affect the food safety system.

Types of Self-Inspection

There are two types of self-inspection. The first type is the daily inspection conducted by each supervisor in his or her area of responsibility, such as a production line or other plant area for which the supervisor is responsible. The Plant Sanitarian/Hygiene Manager, Quality Assurance Manager/ Supervisor, and other designated personnel should inspect the entire plant daily for hazards before start-up and during manufacturing. A short list of defects noted should be recorded for immediate follow-up, as required. The second type should be the periodic formal plant inspection by the multidisciplinary management team, supervisors, and employees in their areas of responsibility.

The inspection time should be short and focused for maximum benefit. An inspection that is two hours long and is highly focused on one area is preferable to a more time-consuming inspection that interferes with team members' other duties or causes team members to lose focus or interest. As previously noted, the team should include supervisors in their areas of responsibility. The inspection should also be used to train employees in good procedures and practices for food safety. It must be documented and list noted discrepancies. For each discrepancy, provide the course of corrective action required, person(s) responsible, estimated date of correction, and actual completion date. Upper level management is responsible for reviewing and providing resources to correct inspection findings that pose a program failure or food safety risk in the marketplace.

Conducting the Self-Inspection

The inspection team should conduct the plant self-inspection at least once each month. If the plant is small or has one production line or system, the entire plant should be completed during the inspection. If the plant is large, it may be necessary to divide the plant into 2, 3, or 4 inspection zones. One area

should be inspected each week, meaning the entire plant will be inspected by the end of a single 2-, 3-, or 4-week cycle. If the plant is divided into sections, the plant areas should be defined and inspected together in a logical way. Examples are: bulk storage systems; raw materials warehouse; processing (further divided by product line, e.g. line #1, line #2, etc.); filling; packaging; finished product storage; support areas (maintenance, locker and toilet rooms, etc.); outside grounds and roof; or other divisions as dictated by area of management responsibility. This will help to associate food safety hazards found during the inspection with the inspected area and responsible personnel.

Inspection Preparation

Members of the self-inspection team should prepare in advance for the inspection by thoroughly reviewing the requirements in these standards and by examining previous inspection reports. This activity should not be interrupted. Team members should focus exclusively on the inspection throughout its duration. If the plant is large, the inspection should focus on selected areas and these areas should be thoroughly inspected. It is important that the team conduct a thorough inspection, using the criteria in the AIB Standards.

Team members should be attired in company uniform with all the proper inspection equipment including flashlight, spatula, tools to disassemble equipment, tape recorder or paper to take notes, and safety equipment. They should follow all applicable plant policies.

Inspection Notes

One person should be assigned to take inspection notes for the team. This person is designated throughout the rest of this document as the scribe. The inspection should be systematic. Begin in one area such as receiving, then move through the

plant area or production line in a logical sequence. The notes should be written so they relate directly to the area being inspected. This will allow the management team to use them to focus on those plant areas or practices that pose the greatest food safety risks.

It is important that the scribe write down all observations made by the team. The team should discuss the observations so all members understand the hazard observed, correction needed, and what changes can be made to the management system to prevent recurrence of the problem or hazard. Each written observation should be coded with the appropriate AIB category as follows:

1. (AP) Adequacy of the Food Safety Program
2. (PC) Pest Control
3. (OP) Operational Methods and Personnel Practices
4. (MS) Maintenance for Food Safety
5. (CP) Cleaning Practices
6. (COM) Comment - Not a deficiency, but generally a statement of fact, not requiring any action

The scribe should also code each observation with the word designation "Serious," "Unsatisfactory," or "Improvement Needed" if the inspection observation fits the definition in the AIB Standards.

Definitions

Unsatisfactory:	Imminent food safety hazard, program failure, or departure from the Good Manufacturing Practices
Serious:	Important potential food safety risk or risk of program failure
Improvement Needed:	A potential hazard, partial program omission or food safety finding that is inconsistent with the Good Manufacturing Practices (GMPs). If this hazard, omission or finding is not corrected, it could lead to a program failure.
Shall:	A requirement according to the AIB Standards
Should:	A recommendation according to the AIB Standards
Product Zone:	The area directly above exposed raw material, intermediate product or material, and/or finished unwrapped food products, processing equipment, and/or equipment surfaces that contact food.
Product Area:	The area within close proximity of a product zone.

The AIB Food Safety Rating System: Using the Scoring Procedures

Upon completion of the inspection, the scribe should number all inspection observations and transcribe them (report item numbers) to the AIB Rating Analysis Recap Form. Item numbers should be entered on the Recap Form in the proper category. Any items with a designation of "Serious" or "Unsatisfactory" should be noted in the classification box under the corresponding designation.

The number of the deficiency item(s) in each category should be placed in the Report Deficiencies by Item # column. This is necessary so the scribe can assign correct scores for each category (do not include any comment items). The scribe and team should reread the inspection observations in the report to assure that the correct category and classification have been assigned. These steps will enable the scribe and the inspection team to analyze the inspection notes according to the criteria in the AIB standards and to translate them into numerical scores.

The scribe should then assign each category a point value within the range given for the category rating classes noted in the section below. This point value should relate to the worst food safety item in each category. For example, the inspection notes may indicate that a hazard should be classed as an "Unsatisfactory" item, a "Serious" item, an "Improvement Needed/Potential Hazard," or a "Minor Improvement" item.

The total number of items and the level of severity of the **worst** item(s) will determine whether the category score is at the upper or lower end of the scoring range in each category. Category scores should be in five point increments. If a category item is coded as "Serious" or "Unsatisfactory," the points assigned to that category must fall within that range.

Scores for the category "Adequacy of the Food Safety Program" must be consistent in assessment criteria, results, and point value with the observations and analyses recorded for the other four categories. This is important, since it will enable an objective analysis of the programs or practices that allowed or caused the deficiencies observed during the inspection. The total plant inspection score is the sum of all the category scores.

Category Rating Classification

The following range descriptors will be used to assign category scores:

Minor improvements needed,
no potential for contamination ..... 180 - 200

Some improvement needed,
potential hazards noted ..... 160 - 175

Serious deficiencies (see definition) ..... 140 - 155

Unsatisfactory deficiencies (see definition) ..... <140

If an unsatisfactory item has been identified, if a management program is unsatisfactory by definition, or if one of the categories has a score below 140 points, the total score classification will be "Unsatisfactory" regardless of the point total.

Plant Rating Classification

The plant shall receive a total score classification based on the numerical ranges below:

Superior ..... 900 - 1,000

Excellent ..... 800 - 895

Satisfactory ..... 700 - 795

Unsatisfactory ..... < 700

Inspection Report and Remediation Plan

After the score has been assigned and the report discussed, a plan for abatement of the food safety risks should be implemented. This plan should focus not only on correcting the deficient item(s), but also on improving the management system to prevent recurrence of the deficiency or deficiencies.

Public Recognition

A Certificate of Achievement will be awarded following each inspection that results in a "Superior" or "Excellent" rating according to the criteria and rating system described in the *AIB Consolidated Standards for Beverage Plants*.

A Certificate of Participation will be issued to plants achieving a "Satisfactory" rating according to the AIB criteria and rating system.

I. Adequacy of Food Safety Program

A. Responsibility and authority for assuring compliance with federal, state, governmental and/or any other appropriate regulatory law or guideline **shall** be clearly assigned to a competent supervisory-level person or persons, and a functional organizational chart **shall** be maintained. The appropriate FDA registration **shall** be maintained. The competent supervisory-level person **shall** ensure that all employees are aware of their responsibilities and mechanisms are in place to monitor the effectiveness of their operation. The company **shall** have a system in place to ensure that it is kept informed of all relevant legislation; food safety issues; scientific and technical developments; and industry codes of practice. This system may be maintained at a central corporate level or at the plant level.

B. The department(s) responsible for implementing hygiene/sanitation, quality control or quality assurance **shall** establish written procedures or work instructions outlining specific responsibilities of each department manager and employees in a Quality Manual.

1. These procedures and work instructions will be defined in job descriptions and there will be appropriate arrangements in place to cover for the absence of key employees.
2. This Quality Manual should state the company's commitment to quality and should have a scope that covers and implements the requirements in these standards.
3. The Quality Manual should be readily available to relevant staff and the company's management **shall** regularly review its quality and production system to ensure continued effectiveness and suitability.
4. Included in the Quality Manual **shall** be a clearly defined and documented quality policy statement that states the

company's intention to meet its obligations to produce safe and legal products and its responsibility to its customers. The company's senior management **shall** demonstrate commitment to the implementation of the Company Quality Policy by signing off on this policy. All supervisory staff and key personnel **shall** understand and implement the policy and it **shall** be communicated throughout the company and regularly reviewed.

C. Each beverage plant **shall** establish a formal food safety committee. This committee should be multidisciplinary in membership and operate on a predetermined frequency, ensuring that complete inspections of the entire plant are conducted no less than once per month. Records of each inspection are an integral part of this requirement, and documentation of specific assignments and actual accomplishments **shall** be maintained. Follow-up inspections should be done to ensure that items are corrected.

   In addition, the company **shall** audit those systems and procedures critical to product safety, legality and quality, to ensure they are in place, appropriate and complied with. The audits **shall** be scheduled and their scope and frequency **shall** be established in relation to the risks associated with the activity. Internal audits **shall** be carried out by competent auditors, who should be independent of the area of operation being assessed. Results of the internal audit **shall** be brought to the attention of the personnel responsible for the activity audited. Corrective actions and timescales for their implementation **shall** be agreed upon. A record of all programmed internal audits and associated corrective actions **shall** be maintained. Corrective actions **shall** be verified to ensure satisfactory completion.

D. All departments directly involved in implementing food safety **shall** establish an appropriate budget and support to maintain the proper and timely acquisition of appropriate

tools, materials, equipment, monitoring devices, chemicals, and pesticides.

E. A Master Cleaning Schedule (see Appendix) for periodic cleaning assignments and a daily housekeeping schedule **shall** be undertaken as a formalized written plan. It must specify frequency, responsibility, and post-cleaning evaluation and **shall** be up-to-date. This schedule should include the outside grounds, building, drains, utensils, and equipment, including refrigeration equipment.

The cleaning tasks should be divided into three general areas and included on the appropriate schedule:

Type of Task	Appropriate Schedule
Periodic "deep cleaning" tasks, performed other than daily	Master Cleaning Schedule
Maintenance cleaning	Master Cleaning Schedule
Daily "housekeeping" tasks	Housekeeping Schedule

F. Detailed equipment cleaning procedures **shall** be developed for training personnel and maintaining the hygiene level of the equipment. The written cleaning procedures **shall** include the chemicals, concentrations, tools, and disassembly instructions for equipment at the level needed to facilitate the appropriate sanitation levels of the processing and filling equipment, building areas, and outside grounds. Specific cleaning procedures **shall** be developed to prevent cross-contamination between allergen and non-allergen-containing products.

G. Inspection and documentation of incoming materials:

1. The appropriate department **shall** maintain documented procedures for inspecting incoming raw materials.
2. In order to assure product integrity, trained personnel utilizing the appropriate equipment **shall** inspect all incoming vehicles, raw materials and packaging. These incoming goods inspections **shall** include checks for

the presence of pest infestation and other objectionable materials.

3. Both dry and liquid bulk deliveries **shall** include visual inspection both before and after unloading. All findings **shall** be documented.
4. Records indicating date of receipt, carrier, lot number, seal integrity and number verification, temperature (if required), amount, and product condition **shall** be maintained.
5. Raw materials containing allergens and those susceptible to mycotoxins or pathogenic microorganisms should be segregated and covered by a separate written procedure, with appropriate documentation.

H. Appropriate specifications **shall** be on file for raw materials, packaging materials, finished products, and intermediate/ semi-processed products. Specifications **shall** be adequate and accurate and **shall** ensure compliance with relevant food safety and legislative requirements. Specifications **shall**, where appropriate, be formally agreed upon with relevant parties and **shall** be reviewed periodically.

I. Records of results of examinations and/or copies of supplier's guarantees or certifications that verify compliance with federal or other governmental regulations, guidelines or Defect Action Levels of raw materials, including ingredient gases, food packaging, and finished products **shall** be maintained.

Fruits being received should be accompanied by information identifying the grower location and picking date.

J. A formalized written program **shall** be maintained for the control of all chemicals used in maintenance, pest control, cleaning and sanitizing, laboratory, and processing. The program **shall** outline the requirements to reduce the

potential for product contamination including provisions for approval authority, purchase, Material Safety Data Sheets (MSDS), sample labels, storage, inventory control, and use of chemicals. Records of employee training in the proper use and handling of chemicals **shall** be maintained.

K. A formalized written program **shall** be maintained for the control of all allergens. The program should include but is not limited to allergen change-over inspections, pre-operational inspections, container designations, personnel practices, and storage areas.

L. Each beverage manufacturer **shall** establish a Hazard Analysis Critical Control Point (HACCP) program. The fruit juice processors in the United States or exporting to the United States **shall** comply with requirements of the Juice HACCP Regulations. The HACCP program **shall** have senior management commitment. A multi-disciplinary team **shall** be established and the team leader **shall** be trained and able to demonstrate competence in understanding and applying HACCP principles. HACCP team members **shall** have adequate training and experience.

Prior to HACCP plan development, each beverage manufacturer **shall** have implemented and documented the prerequisite programs. These programs include, but are not restricted to, cleaning and sanitation/hygiene, GMPs and personnel practices, pest control, preventive maintenance, chemical control, allergen control, food safety customer complaints, recall and traceability, supplier specifications and control, and receiving, storage and shipping.

The HACCP system **shall** be specific to the application, practical to implement and effective in controlling the identified hazards of the operation. Through this system, the company **shall** be able to demonstrate effective control of all operations undertaken. The seven principles of HACCP **shall** be followed and consist of the following points:

1. Describe each product manufactured and identify hazards inherent to the items being manufactured. An assessment of risk **shall** be included and **shall** identify which hazards are of such a nature that their elimination or reduction to acceptable levels is essential to the safe production of beverages. The following should be considered, wherever possible, when conducting the hazard analysis:

    a. The likely occurrence of hazards and severity of their adverse health effects.

    b. A qualitative and/or quantitative evaluation for the presence of biological, chemical, and/or physical hazards.

    c. Survival and multiplication of micro-organisms of concern.

    d. Any conditions leading to the above.

    A hazard analysis study **shall** be undertaken for all products, both old and new, to identify and assess all potential safety hazards and associated risks. This study, where appropriate, may include factory trials and testing to verify that product formulation and manufacturing processes are capable of producing a safe and legal product. Any new products, processes or equipment should also have a hazard analysis conducted on them during the Research and Development phase to identify and assess all potential safety hazards and associated risks.

2. Determine the critical control points (CCPs) and identify the procedure for controlling the hazard. CCPs, identified in relation to the operation, **shall** be controlled and monitored within predetermined critical limits.

3. Identify the critical limits associated with each CCP necessary to control each hazard identified.

4. Specify monitoring frequency and designate person(s) responsible for testing.
5. Establish and document deviation procedures.
6. Establish and document verification procedures.
7. Maintain documentation of procedures, records of conformance and effective correction actions resulting from non-conformance.

All processes and process lines shall be covered by the HACCP system and each HACCP plan shall be appropriately reviewed. This review should occur at least yearly.

M. The Personnel Department **shall** create specific, written procedures for providing food safety training to all personnel, including new employees, and maintain a record of training completion. This training will include the written employee policies that have been established for the company. Refresher training should be done on an annual basis. Prior to beginning work, temporary personnel and contractors **shall** be trained as appropriate, and **shall** be adequately supervised throughout the working period.

N. A formalized written program for evaluating consumer and/or customer complaints, particularly those related to adulteration, **shall** be established. This program **shall** conform to company policy and should include the rapid dissemination of complaint information to all departments responsible for implementing the food safety program. Complaint information **shall**, where appropriate, be used to avoid recurrence and implement ongoing improvements to product safety, legality and quality. Actions appropriate to the seriousness and frequency of the problems identified **shall** be carried out promptly and effectively.

O. A formal recall program **shall** be on file for all products being manufactured. A written procedure should be on file

and **shall** be regularly reviewed, and if necessary, revised to ensure it is current. All products **shall** be coded and lot or batch number records **shall** be maintained. Records of country of origin for juice concentrates shall be maintained, where required. Distribution records **shall** be maintained to identify the initial point of distribution to facilitate segregation and recall of specific lots. The recall program should be tested every six months and the test should be documented. As a part of the recall program and product traceability, the company **shall** adequately identify all raw materials and be able to trace work-in-progress and finished product at all stages during manufacture, storage, dispatch and, where appropriate, distribution to the customer. Where rework or any reworking operation is performed, traceability **shall** be maintained and procedures **shall** be implemented to ensure the safety, legality and quality of the finished product.

P. Clear procedures for the control of non-conforming work-in-progress, finished or returned product **shall** be in place and understood by all authorized personnel. These procedures should include disposition by rejection, acceptance with restrictions, or regrading for an alternative use. Corrective actions **shall** be commensurate with the seriousness of risk identified. Adequate documentation **shall** be kept of the action taken. All non-conforming product **shall** be handled or disposed of according to the nature of the problem and/or the specific requirements of the customer. Disposition of non-conforming material should be tracked to ensure that inventories are adjusted accordingly to facilitate recall. Damaged or destroyed materials should be recorded and proper adjustments to the product inventory records should be made to accurately account for the damaged or destroyed materials.

Q. Each beverage manufacturer **shall** establish a procedure for handling governmental or regulatory inspectors and third

party auditors. This procedure should include, but not limited to:

1. Person or persons delegated to accompany all inspectors
2. Company policy regarding photographs
3. Company policy regarding records and samples

R. Processing records such as those required for bottled water or thermally processed products **shall** be maintained and shall contain sufficient information to comply with government regulations. The company **shall** maintain legible, genuine records to demonstrate the effective control of product safety, legality and quality. The company **shall** have in place procedures for collation, review, maintenance, storage and retrieval of all records pertaining to product safety, legality and quality. The records **shall** be retained in good condition, for an appropriate defined time period so that they can be reviewed. Any amendments to records should be appropriately authorized.

S. The company **shall** have documented procedures for evaluation, selection, and maintenance of approved suppliers of goods and services that affect product quality and food safety. An up-to-date list of approved and non-approved suppliers is required. The procedures **shall** define how exceptions are handled, i.e., the use of products or services, where inspection or monitoring has not been undertaken. These procedures **shall** include clear criteria for initial and ongoing assessment and standards of performance required. Assessment may take the form of monitoring performance through in-house checks, certificates of analysis or extend to supplier inspection, as appropriate. Supplier assessment may include product handling, agrochemical records, evaluation of HACCP systems, product safety information, and legislative requirements. The methods and frequency of assessment should be based on the risk to the organization. Where the

company undertakes or subcontracts analyses critical to product safety, legality and quality, the laboratory **shall** be independently accredited by a competent body.

T. A glass and brittle or hard plastics policy **shall** be written and implemented. The policy should state that no glass or brittle plastics are to be used in the plant, except where absolutely necessary. The policy should also state that no glass should be brought into the plant in employees' personal effects. Included in the policy should be a procedure for handling any glass that is broken in the plant. The procedure should also cover any brittle or hard plastic that is broken in a location where it could jeopardize the product. In addition, a list of all essential glass and brittle plastics should be compiled and the items on the list checked on a regular basis to ensure that any accidental breakage is noted.

U. A formal preventive maintenance program and work order system **shall** be in use to prioritize the elements of identified structural, equipment, or utensil maintenance problems that could cause food adulteration. The company **shall** ensure that the safety and legality of product is not jeopardized during maintenance operations.

V. Beverage processing operations **shall** establish a formalized program to monitor for the effective control of microorganisms. Microbiological testing may include, but is not limited to, Total Plate Count, coliforms, *E. coli*, anaerobic and aerobic bacteria, yeast, mold, *Lactobacillus*, *Alicyclobacillus acidoterrestris*, and acid tolerant bacteria. Sampling points may include, but are not limited to, raw materials, product water, operations water, finished product, air quality, product contact surfaces, rinse water, syrup processing equipment, incoming tankers, and environmental surfaces.

For water bottling plants, where applicable, testing shall be conducted for physical, chemical, and radiological standards as established by the regulatory authority. Records **shall** be maintained. On site laboratory facilities **shall not** jeopardize the safety of product.

W. In countries where required, raw material testing programs for pesticide residues, GMO, heavy metals, and radioactivity **shall** be established and implemented.

II. Pest Control

A. A formalized preventive pest control program **shall** be maintained in the plant. The pest control program may be undertaken by trained in-house personnel or be provided by an outside pest control contractor. The plant **shall** maintain written procedures outlining the requirements of the program to reduce the potential for product contamination from pest activity or the use of materials and/or procedures designed to control pest activity. Pest control activities **shall** at all times be conducted in total compliance with the regulatory requirements of the agency controlling such procedures. In addition, specific programs and procedures will include as a minimum:

1. Pesticide applications made within a plant or on the grounds of a plant will be undertaken by a licensed pest control contractor or properly licensed or trained in-house employee, where such licensing provisions are required by government codes. In the absence of such regulatory requirements, applicators must demonstrate they have received proper training in the proper and safe use of pest control materials by attendance at a recognized seminar or have documented training and be under the supervision of a licensed applicator, where required by government codes. Pesticides designated for "Restricted Use" **shall** only be used by trained, licensed pest control applicators, where a license is required by government codes.
2. The plant serviced by in-house personnel (licensed or trained pesticide applicator or applicator(s) **shall**:
    a. Maintain a file of sample labels and chemical safety data information for each pesticide used and **shall** maintain pesticide usage records as well as records

on maintenance of the safety and protective equipment used.

b. Maintain and enforce written procedures for the application of all pesticides.

c. Maintain accurate records of application of pesticides as outlined in section 3. d. below.

3. Facilities serviced by a contracted licensed pest control company **shall** maintain the following:

   a. A contract describing the specific services to be rendered, including materials to be used, methods, precautions, and chemical safety data information required by government regulations.

   b. Sample labels for all pesticides used. Sample labels **shall** be kept on file for the time specified by regulatory codes.

   c. Accurate and complete service records describing current levels of pest activity and recommendations for additional efforts needed to correct conditions allowing a potential for pest activity.

   d. Accurate documentation of all pesticide applications, including insecticides, rodenticides, and herbicides, made in or around the plant. Documentation **shall** be maintained in accordance with government regulations and must document, at a minimum:

      i. Materials applied, including EPA registration number, where available
      ii. Target organism
      iii. Amount applied
      iv. Specific area where pesticide was applied
      v. Method of application
      vi. Rate of application or dosage
      vii. Date and time treated
      viii. Applicator's signature

e. A copy of the current liability insurance and evidence of a current applicator's license, where a license is required.

B. All facilities **shall** establish effective preventive programs for the elimination of pest activity. The effectiveness of the programs will be measured by the lack of observation of pest activity and evidence. Specific procedures include but are not limited to:

1. Outside bait stations for the control of rats and mice. These bait stations should meet tamper resistance standards and **shall** be properly positioned, anchored in place, locked, and properly labeled in compliance with regulatory requirements. The bait stations **shall** be installed around the exterior perimeter of the plant at 50-100 foot (15-30 meter) intervals. Where allowed by local ordinance, the stations should also be installed along the fence line in accordance with industry best practice. Properly maintained mechanical rodent control devices may also be used, where allowed by government regulations.

   Lids to the bait stations **shall** be locked with devices supplied by or recommended by the manufacturer. The use of reusable plastic ties or other easily cut or tampered with materials **shall not** be used.

   Baits used **shall** be approved registered rodenticide or monitoring (non-toxic) feeding blocks.

   Service conducted on the monitoring devices **shall** be in line with levels of rodent activity in the stations. However, all stations **shall** be inspected and serviced no less than once per month. Each service and the results of the service will be documented for each station or device and maintained on file.

2. Internal measures **shall** comply with government regulations. Unless prohibited by regulatory requirements, internal control programs **shall** consist

of the use of mechanical traps, extended trigger traps, or glue boards, but should not include feeding stations of any kind.

In countries where mechanical traps and/or glueboards are prohibited by law, internal feeding stations containing non-toxic bait may be used for monitoring purposes. These feeding stations **shall** be used in a manner consistent with the label directions for the bait and in a manner that minimizes the potential for contamination of the food products or materials in storage. These stations **shall** contain only non-toxic bait, unless evidence of rodents has been documented in the recent past. If activity has been found, toxic bait can be used until the activity is eliminated. Non-toxic bait should then be reinstalled in the stations for routine monitoring purposes.

These stations should be constructed of a durable material such as hard plastic and should be kept locked and secured to keep them in place. Measures taken should be in response to the level of activity present.

It is recommended that the internal devices used for routine monitoring purposes be positioned at 20-40 foot (6.5-13 meter) intervals along exterior perimeter walls. Where possible, rodent control devices should be installed at each side of exterior overhead and pedestrian doors or where there is a potential for rodent entry into the plant. In any area where there is a potential for rodent activity, such as raw material storage areas within a plant, rodent control devices should be installed along interior walls. The contractor or plant personnel **shall** inspect and clean the devices at least once a week.

3. Maps or schematics showing the locations of the rodent control devices **shall** be maintained and kept current. A record of the service and cleaning of each rodent control device **shall** be maintained in each device. The

service documentation should include the findings from the device inspections.

4. Rodent burrows, rodent runs, and any conditions attracting rodents or other pests both inside and outside the plant **shall** be eliminated.
5. Electric flying insect monitors should be used as needed to identify flying insect entry into the plant. Units should be installed so that insects are not attracted from outside the building. Units should not be placed within 10 feet (3 meters) of exposed product on a production or packaging line. All units should be listed on the Master Cleaning Schedule for cleanout on a weekly schedule during peak insect season. They can be cleaned monthly during off-peak season. Installation and use must follow all local regulations. The light tubes should be changed on an annual basis and records of this maintained.
6. Birds **shall** be controlled by exclusion: netting, screening, mechanical traps or avicides, if legal and practical. The use of avicides is not permitted inside the plant.
7. All pesticide containers and application equipment **shall** be properly labeled to identify the contents. Insecticides or herbicides each require separate equipment for application. All equipment used for pesticide application **shall** be properly maintained in serviceable condition.
8. Pesticides stored in a plant **shall** be stored in a locked enclosure, preferably in an outside building away from production areas. Easily understandable labeling warning of the contents and limiting access **shall** be posted on the exterior entrances to this enclosure. The storage enclosure **shall** be adequate in size and construction and well ventilated. The enclosure **shall** contain the necessary materials to control spills or leakage and to avoid injury to personnel.

9. Disposal of pesticides, pesticide containers and pesticide residues **shall** be done in a manner that meets all regulatory guidelines and must be consistent with the instructions included on the label for the material.

C. Pest monitoring devices and appropriate integrated pest management strategies should be properly used to provide ongoing monitoring for pest activity and to design an effective control program to eliminate pests and the potential for pest activity.

III. Operational Methods and Personnel Practices

A. The procedures for receipt, storage, and handling of raw materials **shall** be established and comply with the Good Manufacturing Practices. The procedures **shall** include the following criteria:

1. Receipt and Storage of Materials:

   a. Damaged and/or badly soiled or infested containers **shall not** be accepted.

   b. Materials shipped in damaged, dirty, or infested vehicles **shall** be rejected. Proper documentation specifying defects and reasons for rejection **shall** be maintained.

   c. Perishable or frozen materials **shall** meet specific minimum temperature requirements at point of receipt. Proper documentation **shall** be kept.

   d. Produce **shall** meet conditions of state and local requirements at receipt.

   e. All receiving dates **shall** be placed on the bottom unit of the pallet or individual container and be readily visible. The placing of receiving dates on stretch-wrap should be discouraged.

   f. Storage practices **shall** be appropriate to the item being stored. Ingredients, finished goods, packaging and other items **shall** be stored off the floor and at least 18 inches (50 cm) away from walls and ceilings. Storage off the floor can be on pallets, slipsheets or stands. Adequate space for cleaning **shall** be maintained between rows of stored products. The recommended space is 14 inches (40 cm) between every two pallet rows. Storage slots and traffic lanes should also be provided for items stored at floor level. If an 18-inch (50 cm) clearance

is impossible due to aisleway widths and the turning radius of forklifts, the rack system can be installed against the wall. In this instance, a bottom rail must be installed 18 inches (50 cm) off the floor so that no pallets are stored on the floor. This will allow for cleaning, inspection and monitoring for pests.

g. All ingredients and packaging, including labels, **shall** be stored in a clean, well ventilated, and dry area and be protected from condensate, sewage, dust, dirt, and toxic chemicals or other contaminants. Any partially used packaging materials **shall** be effectively protected before being returned to storage. If possible, packaging should be stored away from raw materials and finished product. Where packaging materials pose a product safety risk, special handling procedures **shall** be in place to prevent product contamination or spoilage. Failures and corrective actions taken **shall** be recorded.

h. Proper rotation of all ingredients, packaging supplies, and other materials **shall** be undertaken on a "first-in, first-out" (FIFO) basis or other verifiable method to ensure stock rotation.

i. Inventories should be maintained at reasonable and appropriate volumes to avoid excessive age and insect infestation. A repalletizing program **shall** be implemented for ingredients susceptible to pest activity in storage for more than four weeks, and the repalletizing date **shall** also be affixed near the original receiving date.

j. Pallets and skids **shall** be kept clean and in good repair. When pallets or other wooden surfaces are washed, they should be properly dried before use. Slip-sheets should be used between pallets and bags

of ingredients and between double-stacked pallets to protect ingredients from damage by the pallet.

k. All toxic chemicals, including cleaning and maintenance compounds, and all nonproduct related materials, such as parts and equipment, **shall** be completely segregated from all food ingredients and packaging supplies.

l. Complete segregation of Research and Development items and other infrequently used raw materials and packaging supplies should be confined to a designated area and regularly inspected for signs of potential or actual contamination.

m. A designated morgue and/or salvage area **shall** be provided and fully segregated from usable stock to prevent possible contamination. Reworking of salvage **shall** be undertaken weekly or as necessary to keep quantities at minimal levels. Rework **shall** be identified so as to maintain traceability.

n. The company **shall** ensure that product is not released unless all release procedures have been followed. The company **shall** ensure that product is only released by authorized personnel.

o. All outside receiving lines or caps for bulk dry, liquid, gas ingredients, and chemicals **shall** be secured and identified. Hoses, caps, connectors and couplings **shall** be stored in a clean and secured environment.

p. Clear and concise sampling procedures **shall** be developed for obtaining quality control samples required from ingredient containers. All openings created for sampling will be properly resealed and identified as such.

q. Packaging should be free from staples and other items likely to cause contamination. When in

storage, containers should be covered or inverted to protect from overhead contamination.

r. When unloading bulk materials, appropriate means of filtering of air or covering of the inspection hatch **shall** be provided to eliminate potential for entry of foreign bodies or insects during the unloading process.

s. Seals on bulk container hatches or other shipping containers **shall** be intact and verified that seal numbers match those listed on the bill of lading.

t. "Tanker wash tags" **shall** be verified and retained on file.

u. All artificial and natural flavors and colors, direct and indirect additives, and processing aids **shall** meet regulatory requirements.

B. Transfer and Handling of Materials:

1. Personnel should quickly eliminate spillage, leakage, and waste at all times.

2. Containers **shall** be kept off the floor at all times and covered when not in use, and all ingredient storage containers **shall** be properly identified to maintain ingredient identity and traceability throughout usage.

3. All materials selected for transport to processing areas should be visually inspected and cleaned prior to transport. Drums and barrels should be wiped clean. Packaging material should be removed from its protective outer packaging outside production areas to eliminate risks of contamination.

4. Sifters, sieves, or scalpers used for ingredients as foreign material control devices **shall** be checked at least weekly for torn screens and other defects. Records of these checks **shall** be maintained. Reject materials **shall** be visually inspected no less than daily with the observations documented. The source of any unusual

foreign objects should be identified and addressed. If any foreign objects are observed in the rejected material that could have damaged the sifter, sieve, or scalping screens, those screens should be immediately inspected for damage to ensure effective foreign material control.

5. All dry bulk ingredients **shall** be sifted and all liquid ingredients strained before use with an appropriately sized screen for the specific material.
6. All bulk liquid ingredients **shall** be provided with accessible and cleanable in-line receiving strainers. Strainer mesh sizes must be sufficiently restrictive to remove foreign matter. The liquid strainer should be checked before and after each load.
7. Effective measures **shall** be taken to prevent the inclusion of metal, wood, glass, and other extraneous materials in produce. This can be accomplished through the use of rock traps, air cleaners, magnets, visual inspection, etc.
8. Produce washing **shall** be conducted with appropriate chemicals at label-defined concentrations, pH, and temperature. Records of the washing operation **shall** be maintained.
9. Rubbish, trash, or inedible waste **shall** be stored in properly covered labeled containers and emptied at least daily. When rubbish or inedible waste is transported, it must not come in contact with raw materials, work-in-progress, or finished product. Waste disposal **shall** meet legislative requirements. Where appropriate, waste **shall** be removed by licensed contractors.
10. All in-use ingredient containers **shall** have individual transfer scoops. The use of a common scoop for multiple ingredients **shall** be strictly prohibited in order to prevent cross contamination.

11. All carry-over product, work-in-progress, and/or ingredients **shall** be properly identified and dated. All carry-over **shall** be minimized and used promptly at the first opportunity.

12. Re-worked or blended product shall be lot traced and strained prior to use.

C. Operational Appearance:

1. Production equipment should be installed and supplies should be arranged in an orderly fashion. No portable or infrequently used equipment should be stored in production or ingredient storage areas. Equipment should be installed to provide access for cleaning.

2. Adequate work space and storage should be provided to enable the operations to be performed under safe, hygienic conditions.

3. Ongoing housekeeping operations by production and all support departments **shall** be done routinely throughout the operating hours to maintain the work areas in a reasonably sanitary environment. Operational debris should be kept at a minimum.

D. Operational Practices:

1. Effective measures **shall** be taken in processing to prevent the inclusion of glass, wood, metal, and all other extraneous materials.

   a. This can be accomplished through the use of filters, magnets, strainers, and metal detectors at appropriate locations. Foreign material control devices **shall** be provided on each product line at the last possible point. If metal detectors or foreign matter detectors are present, they **shall** incorporate both an alarm, and where applicable, an automatic rejection device, which **shall** divert contaminated product into a clearly identified container, accessible only to authorized personnel.

b. All such measures **shall** be monitored and documented regularly. The company **shall** establish and implement procedures for the operation, routine monitoring and or testing of the foreign material control devices.

c. The company **shall** establish and implement corrective action and reporting procedures to respond to any failure of the foreign material control devices. These will include the isolation, quarantining and re-inspection of all beverages produced since the last acceptable inspection or test of the foreign material control devices.

2. Multiservice primary containers **shall** be adequately cleaned, sanitized, and inspected just prior to being filled, capped, and sealed. Containers found to be unsanitary or defective by the inspection **shall** be reprocessed or discarded. All multiservice primary containers **shall** be washed, rinsed, and sanitized by mechanical washer or by any other method giving adequate sanitary results. Containers **shall** be regularly tested for cleaning chemical residue and validation of the washing process. Mechanical washers shall be inspected on a defined schedule to assure adequate performance. An indicating thermometer **shall** be installed on the mechanical washer to record the temperature of the caustic wash solution. Records of physical maintenance, inspections and conditions found, and performance of the mechanical washer **shall** be maintained.

3. Measures shall be in place to prevent foreign material contamination of single service containers. This can be accomplished through air or water rinsing machines, inverting, or by any other acceptable method. Equipment **shall** be inspected as often as is necessary to assure adequate performance. Records of physical maintenance, inspections and conditions found, and

performance of the equipment **shall** be maintained. Single-service containers that are not washed, air or water rinsed must be received in the plant covered with a tight fitting plastic shroud and shall be stored in such a manner as to protect the containers from airborne and manual contamination.

4. Multiservice shipping cases shall be maintained in such condition as to assure they will not contaminate the primary container or the product. Adequate dry or wet cleaning procedures shall be performed to maintain the cases in a satisfactory condition.
5. Conveyors for upright, open, and formed containers **shall** be protected from contamination by the use of stand-off overhead shields from washing to capping/ seaming operations.
6. Procedures for handling glass container breakage upon receiving, storage, depalletizing, washing, rinsing, filling and capping **shall** be developed and implemented to prevent product contamination. Records **shall** be maintained of glass breakage clean-up located at washing, rinsing, filling and capping operations.
7. The performance of filling, capping or sealing, either single-service or multiservice containers **shall** be monitored and the filled containers visually or electronically inspected to assure they are sound and properly capped or sealed. Containers that do not meet specification **shall** be reprocessed or rejected.
8. Treatment of water by distillation, chlorination, ion exchange, filtration, ultra-violet treatment, reverse osmosis, carbonation, mineral addition, or other processes **shall** be done in a manner so as to be effective in accomplishing its intended purpose. Residual chlorine levels **shall** be monitored routinely. Records **shall** be maintained.

9. Pasteurized beverages **shall** be subjected to time/ temperature parameters that have been established using scientific criteria, and the effectiveness **shall** be verified. Records **shall** be maintained.
10. Unpasteurized beverages **shall** have methods established to assure the microbiological integrity of finished product. Control measures may include, but are not limited to, preservatives, carbonation, acidification, and disinfection of produce prior to extraction.
11. Suitable and sufficient hand washing facilities **shall** be provided at the entrance and at other appropriate points within production areas. These facilities **shall** be provided with an adequate water supply maintained at appropriate temperatures and supplied with single use towels or air dryers. Hand sanitizing stations **shall** be provided where appropriate. Sanitizers for such stations **shall** be regularly monitored for proper concentration to ensure effectiveness. Containers for disposable paper towels should be kept covered.
12. All washrooms, showers, and locker rooms **shall** be maintained in a sanitary manner and kept free of insects, rodents, and mold. Monthly inspections should be undertaken of all company owned employees' lockers for sanitary controls. Open food or drink in lockers **shall** be strictly prohibited. "Wash Hands" signs **shall** be properly displayed in all rest rooms, lunchrooms and smoking areas. Where applicable, the signs **shall** also appear over sinks or entryways to production areas.
13. Production facilities, equipment, and/or accessories **shall** be so designed or provided to facilitate minimum hand contact with raw materials, work-in-progress or finished product.
14. Raw materials, work-in-progress materials and finished product capable of supporting the rapid growth of pathogenic microorganisms **shall** be held at either 40°F

(4°C) or below or 140°F (60°C) or above to whatever degree as appropriate and necessary to maintain internal temperatures below 40° (4°C) or above 140°F (60°C). Frozen materials should be held at 0°F (-18°C) or below.

15. Effective measures **shall** be undertaken to prevent cross contamination between raw materials, refuse and finished foods. Incompatible materials, such as raw and pasteurized products, **shall** be stored in an appropriate manner and under conditions to prevent cross contamination. Particular consideration **shall** be given to the avoidance of cross contamination by ingredients, which would constitute a food safety issue, such as allergens. Programs **shall** be established, where appropriate, to reduce any potential physical, chemical or microbiological contamination risks.
16. Equipment, containers, and utensils used to convey, process, hold or store raw materials, work-in-progress, rework or finished foods **shall** be constructed, handled and maintained during processing or storage in a manner that prevents the contamination of raw materials, rework or finished foods. All containers for work-in-progress or finished product should be used only for designated purposes.

E. Delivery Practices:

1. Finished products **shall** have permanently legible code marks that are readily seen by consumers. Code marks **shall** satisfy regulatory packaging requirements and "lot" definitions and **shall** be utilized in the product recall program.
2. Distribution records **shall** be maintained to identify initial distribution as per governmental regulations, and finished products **shall** be handled and transported in such a way that prevents their actual or potential adulteration.

3. All shipping vehicles **shall** be inspected prior to loading for cleanliness and structural defects that could jeopardize product integrity. These inspections **shall** be documented. Company-owned vehicles used to transport foods **shall** be visually examined, cleaned, and maintained to prevent product adulteration. All local delivery trucks **shall** be internally inspected and cleaned, at least weekly, to identify possible sources of contamination from pests and/or foreign materials. Common carriers and customers should be encouraged to maintain their respective delivery vehicles in a hygienic condition and in reasonable repair.
4. Numbered seals, locks, or other tamper evident devices **shall** be utilized on shipping and delivery vehicles to maintain load integrity in transit. Seal numbers **shall** be recorded for tracking purposes such as on the bill of lading (BOL).
5. Temperatures of perishable and/or frozen products **shall** be taken and recorded upon loading of trucks. All such products **shall** be loaded into a precooled vehicle designed and maintained to sustain required temperatures during delivery. Temperatures of the pre-cooled vehicles **shall** be checked and recorded prior to loading. Procedures **shall**, where appropriate, be in place in the case of transportation breakdown. These procedures **shall** ensure product safety, legality and quality.
6. Where the material transported is susceptible to weather damage, vehicles **shall** be loaded and unloaded in covered bays so as to protect the material.

F. Personnel Practices:

1. Responsibility for assuring compliance by all personnel to plant policy **shall** be clearly assigned to competent supervisory personnel.

2. Employees **shall** be encouraged to practice good personal hygiene habits at all times.
3. Hand washing **shall** be performed at a frequency that is appropriate and should be done any time the hands become soiled. Hands should be washed before beginning work, after using toilet facilities, eating, drinking, smoking or otherwise soiling hands. The effectiveness of hygiene procedures with regard to hands should be checked periodically.
4. Employees **shall** adhere to the following principles when handling raw materials, work-in-progress, or uncovered finished product:
    a. Wear clean outer garments or uniforms. Suitable footwear **shall** be worn within the plant environment. Changing facilities **shall** be provided for all personnel, whether employees, visitors or contractors, prior to entry to production or packing areas, and where appropriate, prior to entry to storage areas. Changing facilities **shall** be sited to allow personnel direct access, without recourse to any external area, to the appropriate production, packing or storage area.
        i. Personnel **shall** enter a high risk operation via a specially designated changing facility, and **shall** follow appropriately specified procedures for donning visually distinctive clean overalls, headwear, and footwear. Personal clothing above the knee should be completely covered by workwear. High risk area workwear **shall** be removed only in a specially designated changing area.
        ii. All protective clothing **shall** be laundered effectively on a regular basis and should be laundered on site or by a contract laundry.

iii. Gloves, if worn, should be subject to adequate control to avoid product contamination.

iv. Outdoor clothing and other personal items **shall** be stored separately from workwear within the changing facilities.

b. Wear effective hair restraints to include, where applicable, head, beard, and mustache covers to fully contain hair and beards. AIB recommends hairnets.

c. Remove insecure costume or hand jewelry, including watches, earrings, rings with settings, false fingernails, fingernail polish, and dangling jewelry. Only plain wedding bands are acceptable, unless prohibited by plant policy and/or safety requirements. Any exception to this **shall** be spelled out in the company policy and the reasoning behind it explained.

d. Perfume or aftershave should be avoided by employees in contact with food products.

5. Eating food, drinking beverages, chewing gum, and using tobacco products **shall** be restricted to ***designated*** areas only.

6. Employee lunches and/or personal effects **shall not** be stored or placed in production or ingredient storage areas. Examples would include sweaters, jackets, shoes, smoking materials, etc. All personal property should be stored in an area defined by company management. Suitable and sufficient rest and catering facilities should be provided for all staff.

7. Personal items such as pens, pencils, or thermometers **shall** be carried in pockets or pouches below the waist when employees are in production areas. There should be no pockets above the waist on the outside of protective clothing.

8. No person with obvious boils, sores, infected wounds, or any other infectious or communicable disease **shall** be permitted to contact food except as required by local or national law. All employee health cards **shall** be kept current and properly posted if required by local law. The company **shall** have a procedure for the notification by employees, including temporary employees, of any relevant infectious disease or conditions with which they may be suffering, or have been in contact. All cuts and grazes on exposed skin **shall** be covered by a detectable metal strip bandage that is company issued and is regularly tested with a metal detector.
9. Noncompany personnel **shall** be required to conform to company food safety/hygiene policies and the Good Manufacturing Practices (GMPs). These would include, but not be limited to: visitors, regulatory authorities, outside contractors, tour groups, and employees' family and friends. Visitors and contractors **shall**, where appropriate, undergo medical screening before entering the raw material, preparation, processing, filling and storage areas.

IV. Maintenance for Food Safety

A. The site **shall** be located and maintained so as to prevent contamination and enable the production of safe and legal products. Consideration **shall** be given to local activities that may have potentially adverse impact, and measures **shall** be taken to prevent product contamination. The site boundaries should be clearly defined. Measures necessary to protect the site from any potential contaminants should be in place and periodically reviewed to ensure they continue to be effective.

B. Building Structure:

1. The grounds around any food plant **shall** be maintained in a manner that will prevent the possibility of food adulteration. The methods for adequate grounds maintenance include, but are not limited to:

    a. Proper storage of equipment away from walls and off the ground to prevent harborage and allow inspection and so the equipment is protected from contamination and deterioration. Storage out of doors should be kept to a minimum.

    b. Removal of litter and waste, removal of weeds or tall grass from within the immediate vicinity of the building.

    c. Maintenance of roads, yards, and parking areas to keep them free of dust, standing water or other potential contaminants.

    d. Provision of adequate drainage from grounds, roof or other areas.

    e. Installation and maintenance of outside wet and/or dry waste or scrap compactors, modules, and dumpsters to minimize leakage or to contain such leakage, permitting the container to be easily removed and the area cleaned. External waste

collection containers and compactors should be closed and/or covered.

f. Measures **shall** be in place to maintain site security.

g. The site should be securely enclosed.

2. All structural beams, supports, and other structural systems that are painted **shall** be maintained in an appropriate manner to preclude or eliminate any chipping, flaking, or peeling paint.

3. Sufficient space should be provided for proper placement of equipment and storage of materials. Adequate aisles or a workspace **shall** be maintained between equipment and/or structures to allow adequate cleaning.

4. Syrup tanks and bottle washing rooms **shall** be located separate from filling rooms if required by regulatory agencies.

5. Bulk systems and unloading areas **shall** be installed and maintained to prevent the adulteration of raw materials or finished product. A roof or other covering is recommended.

6. Floors, walls, and ceilings **shall** be of such construction as to be adequately cleanable and kept in good repair. The following are further guidelines to assist in this:

   a. Walls should be designed, constructed, finished and maintained to prevent the accumulation of dirt, reduce condensation and mold growth, and facilitate cleaning.

   b. Wall/floor junctions and corners should be coved to facilitate cleaning. Cavities in the surface of walls and floors should be avoided to prevent debris from lodging and to avoid pest harborage.

c. The use of glass within the plant, equipment or structure should be avoided. A comprehensive glass policy should be in place if glass must be used.

d. Floors should be designed to meet the demands of the process and withstand cleaning materials and methods. They should be impervious and maintained in good repair. Floors should have adequate sloping to direct the flow of any water or effluent towards suitable drainage.

e. Adequate floor drains with grates **shall** be installed, maintained and operational in all wet processing or wash areas. All floor drain grates must be easily removable for cleaning and inspection. The drains should be easily accessible for cleaning.

f. Consideration should be given to the location of machinery and drains so that any discharge or overspill from processing goes directly into a drain rather than on the floor.

g. Drainage **shall not** compromise product safety and **shall** flow away from high risk areas. Drainage **shall** be designed and maintained to minimize risk of product contamination.

h. Where hollow or suspended ceilings are used, adequate access to the void **shall** be provided to facilitate cleaning, maintenance of services and inspection for pest activity. Ceilings and overheads should be designed, constructed, finished and maintained to prevent the accumulation of dirt, reduce condensation and mold growth, and facilitate cleaning.

i. Roof leaks **shall** be promptly identified and repaired.

7. Fixtures, ducts, and pipes **shall** be installed and maintained in such a manner that drips or condensate do not contaminate foods, raw materials, or food-contact surfaces.

8. Adequate lighting **shall** be provided in all areas. Light bulbs, fixtures, windows, mirrors, skylights, or other glass suspended over product zones, product areas, ingredients, and packaging supplies **shall** be of the safety type or otherwise protected to prevent breakage. Emergency lighting and the headlights on forklifts should also be protected. Where full protection cannot be provided, the glass management system **shall** take this into account.
9. Adequate ventilation should be provided in product storage and processing areas to minimize odors, fumes, and vapors. Air makeup units **shall** be fitted with clean filters and maintained free of mold and algae.
    a. Air return ducts for heating and air conditioning systems or air makeup units **shall** be provided with cleaning and inspection hatches. Fans, blowers, filters, cabinets, and plenums **shall** be placed on a preventive maintenance schedule to prevent possible development of mold or insects, or the collection of foreign material.
    b. Windows and skylights should be non-opening. Where windows and doors must be kept open for ventilation, they **shall** be screened to prevent access by pests.
    c. Dust extraction equipment for dry powder handling equipment should be installed.
10. Fans and other air blowing equipment **shall** be located, cleaned, and operated in a manner that does not cause contamination of raw materials, work-in-progress, finished foods, food packaging materials, and food-contact surfaces.
11. The physical building **shall** be maintained to provide necessary barriers for effective protection against birds, animals, vermin, and insects, and the maintenance

department **shall** be responsible for the elimination of cracks and crevices as well as other insect or rodent harborages. Where external doors to raw material handling, processing, filling and storage areas are kept open, suitable precautions **shall** be taken to prevent pest entry. Doors in these areas **shall** be close-fitting or adequately proofed.

12. The maintenance department **shall** be responsible for the prevention of and the systematic elimination of leakage and excessive lubrication. Where drive motors are mounted over product zones or where conveyors cross or run parallel to others at different levels, catch pans **shall** also be fabricated and installed.
13. Segregation of operations **shall** be undertaken to the degree appropriate and reasonable and **shall** take into account the flow of product, nature of materials, equipment, personnel, airflow, air quality and services provision. Such segregation can be accomplished through the use of air curtains, partitions, doors, and/or other exclusionary systems. The process flow from receiving to shipping **shall** be arranged to prevent product contamination and there **shall** be an effective segregation between high and low risk operations to minimize the risk of product cross-contamination. Facilities for tray and utensil washing and general purpose cleaning **shall**, where appropriate, be adequately segregated from production activities.
14. Each plant **shall** develop design standards to apply to all repairs, changes, or modifications of the structure to reduce the potential for contamination issues or pest harborage and facilitate cleaning.

C. Equipment:

1. All plant equipment and utensils **shall** be designed and of such material and workmanship as to be adequately cleanable and **shall** be properly maintained. Equipment

shall have approval from a recognized certification organization whenever possible and practical.

2. CIP circuits **shall** be designed for proper drainage, with no dead-ends, without cross-connections, and shall have line disconnects in place where needed.
3. Temporary materials such as tape, wire, string, cardboard, and plastic **shall not** be used for permanent repairs. If these materials must be used for emergency repairs, they **shall** be dated and replaced with a proper permanent repair as soon as possible.
4. Food-contact surfaces **shall** be corrosion-free and be made of a nontoxic material.
5. All ingredient and processing systems **shall** be designed and constructed in a manner to facilitate cleaning and inspection. Pipelines, mixing and holding tanks **shall** be self-draining, free from defects, with properly burnished seams, and **shall** be of such construction as to be readily flushed, cleaned, and sanitized.
6. A program **shall** be established for the identification and prevention of ammonia leaks in the process, if applicable, that could result in product contamination. Inspection and corrective action records **shall** be maintained.
7. Bottling operations **shall** be conducted in a manner that protects against contamination. Control measures should include the use of an enclosed area around the filling and sealing area. Dust, dirt, microorganisms in the air, and condensation **shall** be controlled.
8. All regulating and recording controls, thermometers, or other temperature measuring devices **shall** be installed and routinely calibrated on any equipment intended to sterilize, pasteurize, or otherwise prevent the growth of pathogenic microorganisms. This calibration should be traceable to a national standard. In addition,

thermometers should be present inside coolers, freezers, and other temperature-controlled storage rooms.

Ongoing monitoring of temperature control systems **shall** be frequently undertaken with proper documentation maintained and readily available. Mechanical monitoring systems **shall** also be utilized and **shall** trigger an alarm when temperatures exceed limits. The temperature recording devices **shall** be linked to suitable failure alarms.

9. Compressed air used in processing **shall** be properly filtered to remove particles of 50 microns or larger and **shall not** contain dirt, oil or water. Traps and/or filters **shall** be inspected and/or changed regularly. The filters for air used on product contact surfaces should be located as close to the point of use as practicable.
10. Compressed gases used as ingredients **shall** be properly filtered to remove particles of dirt, oil, water and other contaminants. The filters **shall** be inspected and/or changed regularly. The filters should be located as close to the point of use as practical.
11. Only food-grade lubricants **shall** be utilized on food processing machines. All such lubricants **shall** be fully segregated and stored in a secured and designated area. Excess lubricant **shall** be removed after equipment is serviced.
12. Flaking paint on equipment or excessive rust other than normal mild oxidation on mild black steel or ferrous metal is prohibited.
13. Hand jacks, forklifts, and other transporting equipment should be maintained in such a manner that prevents the adulteration of products being transported.

14. Only clean repair parts and equipment should be stored in the parts storage areas.

D. Services:

1. All establishments **shall** have a potable water supply from an approved source. For underground well water supplies, sampling of the water **shall** be undertaken on a frequency consistent with local health department codes and governmental law. Proper documentation **shall** be readily available.
2. The quality of water, steam or ice that comes in contact with food **shall** be regularly monitored and **shall** present no risk to product safety. Boiler chemicals should be approved for food contact if the steam generated comes in direct contact with food.
3. Water intended for bottling **shall** be carried in completely separate lines from water not intended for bottling. These lines should be identified, preferably by different colors. There **shall** be no cross-connection.
4. All water installations and equipment **shall** be constructed and maintained to prevent back siphonage and/or backflow.
5. Wastewater treatment **shall** be conducted in a manner that does not create pest and microbial hazards to the plant environment.
6. The sewage disposal system **shall** be adequate and appropriate for the process and **shall** be maintained to prevent either direct or indirect contamination of food.
7. All washrooms, hand sinks, and locker rooms **shall** have both hot and cold running water readily available. Mix valves to adjust water temperatures **shall** also be provided. It would be desirable to provide automatic foot or knee or infrared operated valves in production areas. Toilet rooms **shall not** open directly into production, packing or storage areas.

V. Cleaning Practices

A. Cleaning operations **shall** be performed in a manner to prevent contamination of materials and products. Cleaning or replacing light fittings and glass **shall** be done in a manner to minimize the potential for product contamination.

B. Only cleaning compounds and sanitizers approved for food contact surfaces **shall** be used. Appropriate verification procedures or testing **shall** be done periodically to insure that the concentration of Clean-In-Place (CIP), sanitizers, and cleaning chemicals are consistent with the product labeling. Equipment s**hall** be effectively rinsed to remove chemical residue consistent with label directions. Routine verification of proper rinsing **shall** be documented.

C. When not in use, all cleaning compounds and sanitizers **shall** be properly labeled and stored in a locked area, away from production and food storage areas.

D. Cleaning equipment and tools **shall** be supplied and be readily available for use. All cleaning equipment **shall** be maintained and stored in such a way as not to contaminate foods or food equipment.

E. Cleaning Definitions:

1. "Deep Cleaning"

   a. "Deep cleaning" **shall** be assigned to the appropriate department(s) and **shall** be accomplished by and consistent with a Master Cleaning Schedule or its equivalent.

   b. The use of air hoses for cleaning is permitted only for inaccessible equipment and in conjunction with deep cleaning operations.

   c. All cleaning procedures **shall** be carried out in compliance with applicable safety laws and regulations and according to formally established equipment cleaning procedures. When undertaken

safely and in compliance with local and national laws and regulations, all equipment guards, trims, and panels **shall** be removed for inspection and cleaning of the interior of all equipment according to the Master Cleaning Schedule. All equipment guards, trims, panels **shall** be replaced after inspection and cleaning of the interior of equipment.

d. Equipment and structural "overheads" such as lights, pipes, beams, vent grids, etc., **shall** be scheduled for deep cleaning according to the Master Cleaning Schedule to prevent the development of insects or mold or accumulation of foreign matter.

e. Processing equipment to be cleaned periodically **shall** include, but is not limited to:

   i. Complete disassembly of the pasteurizer with examination of cleanliness and condition of gaskets.

   ii. Complete disassembly of all air valves with examination of cleanliness and condition of valve seats and O-rings.

   iii. Complete replacement of all line gaskets. Those gaskets that show many cracks and crevices in the rubber should be replaced.

   iv. Complete disassembly of spray balls, pipes, clamps, couplings, and connections.

2. Daily "Housekeeping or Cosmetic Cleaning" **shall** be assigned to the appropriate departments and **shall** be undertaken to ensure work and support areas are maintained during normal working hours. All such operations **shall** be undertaken in a manner to prevent contamination.

   Water use for cosmetic cleaning **shall** be done in such a way as to not contaminate raw materials, work-in-

progress or production equipment with water droplets, mist, or direct contact.

3. All process system tanks, lines, fillers, etc. **shall** be emptied, cleaned, and sanitized on a frequency in compliance with regulatory requirements or industry standards, as appropriate.
4. Change-overs from allergenic to non-allergenic formulations **shall** include a complete clean up of the process system.
5. All CIP systems **shall** be operational and recording thermometers and pressure sensors **shall** be used to monitor the system. Time/temperature and flow rate minimums, and chemical concentrations **shall** be established and CIP recording charts and records **shall** be maintained. Operators of CIP units **shall** be properly trained in cleaning compounds, sanitizers, and the operation of the equipment.
6. Maintenance Cleaning:
    a. Non-sealed electrical panels and boxes **shall** be cleaned and/or inspected on a regular basis.
    b. Maintenance mess and debris created during repairs or alterations **shall** be promptly removed. Emphasis **shall** be given to requiring a full accounting of nuts, bolts, washers, wire pieces, tape, welding rods, and other small items that could contaminate the product.
    c. Grease smears and excess lubricant **shall** be promptly removed from equipment.
    d. Only clean tools and wipers **shall** be used on product zones. Maintenance personnel **shall** observe proper hygienic practices when working on product zones or similar equipment. The use of cleaning utensils that can leave debris behind on product zones or areas **shall** be prohibited unless absolutely necessary, in which case inspection

should occur after their use to ensure that no debris remains that could contaminate the product. This includes the use of wire brushes, sponges, scrub pads, etc.

e. Forklifts, hand jacks, and similar equipment should be scheduled for preventative maintenance and cleaning.

F. Equipment and Utensil Cleaning:

1. Food-contact surfaces and utensils **shall** be cleaned on a regular basis and as often as necessary to eliminate food residue and maintain a good appearance. Food-contact surfaces and machinery that require sanitizing **shall** be cleaned, sanitized, and tested for adequate destruction of pathogenic microorganisms.
2. Non-food contact surfaces should also be cleaned on a regular basis and as often as necessary to eliminate product residue and maintain a good appearance.
3. Utensils, flexible hoses, pipes, clamps, couplings, connections, and intermediate containers **shall** be washed between uses, if appropriate (or as needed), and stored in a self-draining position off the floor.
4. Filter cloths and press racks should be washed, rinsed, sanitized, and dried daily and stored off the floor when not in use.
5. Dollies **shall** be cleaned and maintained in such a way as to prevent product adulteration.
6. Separate and distinct cleaning utensils **shall** be utilized for cleaning food-contact surfaces (product zones) and structural cleaning (product areas). At no time **shall** cleaning utensils used to clean rest rooms, toilet fixtures, or floor drains be used for any other cleaning purpose. Proper identification (by color coding) and segregation of each classification of cleaning utensil **shall** be maintained. All cleaning utensils **shall** be cleaned after use and properly stored.

Conditions for Unsatisfactory Rating

Per AIB Standards, an Unsatisfactory rating will be assigned when an item or items during the audit represents a violation of the following types:

I. If an imminent food safety hazard exists.

II. If food safety programs are nonexistent or deficient in such a way that they do not comply with the GMPs.

III. If food is adulterated such that:

   a. It bears or contains an added poisonous or deleterious substance;

   b. It consists in whole or in part of any filth, putrid, or decomposed substances, or if it is otherwise unfit for use as food;

   c. It has been prepared, packed, or held under insanitary conditions, whereby, it may have been contaminated with filth, or whereby, it may have been rendered injurious to health.

IV. If a violation of the Good Manufacturing Practices (GMPs) is noted that is an imminent food safety risk.

V. If a violation of local or national pesticide regulations is noted, that would represent a significant departure from the regulations or would cause an imminent food safety risk.

Examples of a few conditions most commonly found which will require an unsatisfactory rating assignment have been listed below. **The following only represent examples of conditions for unsatisfactory rating assignments and are by no means inclusive. Similar items not specifically stated will be dealt with by the auditor in view of existing conditions and are always subject to review by AIB International headquarters personnel.**

1. Microbes
    a. The presence of extensive amounts of mold either on or within proximity to the main product zones, jeopardizing product integrity.
    b. Holding temperatures (refrigerators or coolers) in excess of 40°F (4°C) for microbiologically sensitive ingredients or products.
    c. Open sores or boils on employees who have direct contact with product, ingredients, or product zones.
2. Foreign Matter
    a. Torn or missing liquid receiving strainer.
    b. Pesticides used inconsistently with labeled directions.
    c. Flaking paint or rust in main product zone where product contamination is likely.
3. Insects
    a. Ingredients that are internally infested.
    b. Widespread infestation in overheads above sensitive or exposed ingredients or product zones.
    c. Infestations of equipment where product adulteration is likely.
    d. Houseflies or fruit flies in excessive numbers with little control provided.
    e. Any cockroach activity on or in a product zone.
4. Rodents
    a. Visual presence of live rodents.
    b. Evidence of rodent excreta or gnawing on raw materials or finished product.
    c. Decomposed rodent.
5. Birds
    a. Birds residing in processing areas or warehouses.
    b. Bird excreta on product zones, raw materials, or finished product.

RATING ANALYSIS RECAP

Report #: _____ Review Person: _____

Location: _____ Date: _____

A.

B.

C.

D.

E.

Category	Report Deficiencies by Item #	(160-175)**	(140-155) Serious Items	(<140) Unsatisfactory	Reviewer's Score
AP					
PC					
OP					
MS					
CP					
				TOTAL SCORE	

AP - Adequacy of Food Safety Program
PC - Pest Control
OP - Operational Methods and Personnel Practices
MS - Maintenance for Food Safety
CP - Cleaning Practices

****Potential Hazard/Improvement Needed Items**

MASTER CLEANING SCHEDULE

(TASKS OTHER THAN DAILY)

DATES/ INSERT DATES, WEEKS BY NUMBER, OR PERIODS

JOB DESCRIPTION	FREQUENCY	ASSIGNED TO																												

INCOMING INGREDIENT EXAMINATION RECORD

Date	# of Car/Carrier	Product	Lot Number	Amount	# of Broken Bags	# of Insects in Carrier	Rodent Excreta Found	Temp. of Carrier	Comments

Pesticide Usage Log

Year

List all restricted use pesticides purchased according to trade name and EPA registration number on the back

Name of certified applicator(s)	Address	Certification ID No

List separately below all pesticides used

Name of Pesticide Used/EPA Registration No.	Target Organism	Application Data				Date(s) and Time(s) Treated	Applicator's Signature
		Quantity Used	Where Pesticide was Applied	Method	Rate of Application or Dosage		

REFRIGERATOR/FREEZER CONTROL RECORD

Stationary Thermometer Temperature Record (Alarm Checked) (Includes Truck Reefer Units)	Recording Thermometer Temperature Record (Alarm Checked)	Unit #	Time Examined	Examining Employee's Signature

INGREDIENT STRAINER / FILTER EXAMINATION RECORD

Month_____ **Year**_____

Date	Location of Ingredient Strainer or Filter	Type and Orifice Opening Size	Type of Ingredient Strained	Time Examined	Condition of Strainer & Filter	Frequency of Cleaning	Description of Foreign Material Found and Remarks	Examining Employee's Signature

RESTRICTED PESTICIDE PURCHASE RECORD

DATE PURCHASED	TRADE NAME	EPA PRODUCT REGISTRATION NO.

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