


DOCUMENT REGISTER

AND

QUALITY MANAGEMENT SYSTEM MANUAL

Quality Management System Manual Title: Cover Page		Document Number: 11 Revision Date: 0	
Department:	Implementation Date: 01/03/08	Issue #: 1	Sheet 1 of 1
Author: J. Conie	Ownership:	Approved & Released by Director of Research	
			



Quality Management System Manual Title: Document Register		Document Number: DR3 Revision Date: 07/04/08	
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Author: J. Conie	Ownership:	Approved & Release by Director of Research	

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Document Type			Document Status	
Management System Manual			Active	
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DR2	Document Register	06/12/07	01/03/08	01
I2	Introduction and Product Background	06/12/07	01/03/08	01
QO2	Quality Objective	06/12/07	01/03/08	01
RL2	Registered Location	06/12/07	01/03/08	01
R2	Review	06/12/07	01/03/08	01
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Number	Title	Rev. Date	Active Date	Change No.
PCSM 2	Planning and Control of Sigatoka Management	06/12/07	01/03/08	01
PRFS 2	Procedure for Re-entry to Field after Spraying	06/12/07	01/03/08	01
CMMD 2	Control of Monitoring & Measuring Device / Calibration of Equipment	06/12/07	01/03/08	01
CA 2	Corrective Action And Non-conforming Products	06/12/07	01/03/08	01
CR 2	Control of Records	06/12/07	01/03/08	01
IA 2	Internal Audits	06/12/07	01/03/08	01
T 2	Training	06/12/07	01/03/08	01
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HSR 1	Health and Safety Risk Assessment		01/03/08	01
WHLPC2	Wild Life Conservation Plan	06/12/07	01/03/08	02
GR 1	GLOBALGAP (EUREPGAP) Regulations and Checklists	06/12/07	01/03/08	02

Approved By:

Janet Conie, Director of Research

			
Quality Management System Manual <i>Title: Introduction and Product Background</i>		<i>Document Number: 12</i> <i>Revision Date: 06/12/07</i>	
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1.0 Introduction

The Quality Management Systems Manual documents the procedures and forms the basis for the Management System and the terms of reference for the Certification Unit. It defines a single Management System, which covers all produce marketing operations of The Banana Board and its agent, the Banana Research Department. Following the ISO 9001:2000 guidelines, the Quality Management System or Policy Manual describes the way the Banana Board ensures proper guidelines for Good Agricultural Practice among small banana growers in Jamaica and utilizes strategies to protect the environment.

2.0 Banana Product

Banana is a tropical herbaceous plant consisting of an underground corm or true stem and above-ground trunk or pseudo-stem. The pseudostem consists of concentric layers of leaf sheaths. At 9-12 months after the emergence of a new plant, its apical meristem produces a terminal inflorescence, which bears fruit.

The flowers appear in groups or hands on a stalk and are covered by purplish bracts, which roll back and fall off as the fruit develops. The proximal or true hands consist of the female flowers, which will develop into commercial banana fruits. The number of true hands varies from less than five to more than 10. The false hands and male flowers do not develop into commercial fruits but remain as buds.

Ripe bananas are consumed fresh, in salads, ice cream dishes, and puddings. Over ripe fruits can be processed into dried figs and raisins; or pureed for use in baking, baby foods, juices or other value-added products such as beer, wines, liqueurs, jams and jellies. Dried banana slices also form a healthy constituent in trail mixes. Green (mature but not ripe) bananas are boiled whole as a staple or sliced and fried or for a snack. Dried green bananas can also be processed into flour.

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The Banana Board



Quality Management System Manual Title: Quality Objective		Document Number: QO 2 Revision Date: 06/12/07	
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Quality Objective

1.0 PUWS

Percentage Units within Specification (PUWS) is the commercial measure of fruit quality. The minimum threshold level is 90%.

2.0 Maximum threshold levels for critical defects include:

2.1	Crown Rot	2%
2.2	Ripe and Turn	2%
2.3	Scars	7%
2.4	All defects combined	10%

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The Banana Board

<i>Quality Management System Manual</i> Title: Registered Location		<i>Document Number: RL 2</i> <i>Revision Date: 06/12/07</i>	
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Registered Location:


The Banana Board

**10 South Avenue
Kingston
Jamaica, W.I.**

Grower Facilities:

Multi-site Addresses

Approved by: **Director of Research
The Banana Board**

		Procedure	
<i>Quality Management System Manual</i> <i>Title: Review</i>		<i>Document Number: R 2</i> <i>Revision Date: 06/12/07</i>	
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Review

1.0 Purpose

To ensure consistent quality of the banana product and continual improvement of the Quality Management System.

2.0 Procedure

2.1 The Management Representatives in the Research Department and The Banana Board meet to review the Quality Management System. The review team will meet every eighteen months and carry out the following actions:

- 2.1.1 Consider the findings of audits and analysis of records and reviews the effectiveness of corrective; preventative actions; the performance of staff, growers and suppliers within the scope of the Management System.
- 2.1.2 Process performance and product conformity.
- 2.1.3 Review resources training and any other items which could affect the Quality Management System.
- 2.1.4 Reviews customer feedback.
- 2.1.5 Follow-up action of previous management reviews;
- 2.1.6 Recommend improvement.

2.2 The findings, conclusions and recommendations arising from the review are recorded in the minutes of the meeting. A copy of the minutes is circulated to the participants. The recommendations of the meeting are implemented and maintained. The effectiveness of corrective action is checked and recorded in the minutes of the meeting. If necessary, an unplanned internal Management audit is initiated.

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The Banana Board



Quality Management System Manual Title: Definitions		Document Number: D2 Revision Date: 06/12/07	
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Definitions

1.0 Quality

Quality is totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs. Quality is often stated as: “Fitness for Purpose”; or “A product or service free of deficiencies”.

2.0 Quality Assurance

Quality assurance consist of all planned and systematic actions necessary to provide adequate confidence that a product or service will satisfy given requirements for quality. These techniques are aimed at defect prevention.

3.0 Quality Management System (QMS)

The QMS includes all organizational structure responsibilities, procedures, processes and resources for implementing management.

4.0 Inspection

Inspection consists of activities such as measuring, examining, testing and gauging one or more characteristics of a product or service and comparing these with specific requirements to determine conformity. These activities are directed towards defect detection.

5.0 Continual Improvement

Continual improvement is the process of enhancing the environmental management system to achieve increase in overall environmental performance in line with the organization’s environmental policy.


6.0 Environment

The environment is the surroundings in which an organization operates, including air, water, land, natural, human and physical resources, flora, fauna, and their interrelationships.

7.0 Environmental Aspects

Environmental aspects are the elements of an organization’s activities, products or services that can interact with the environment.

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8.0 GAP

GAP is the acronym Good Agricultural Practices

9.0 Crop Rotation

Crop rotation involves planting a crop in an area where another crop was previously cultivated or alternating crops in a single location. This prevents the build up of any pests due to the continual growth of the crop.

10.0 Crop Fertility

Balanced fertilization results in optimum crop nutrition and above all exerts a considerable influence on the quality of agricultural products. Healthy plants are better able to resist disease of pest pressure than a stressed plant.

11.0 Mechanical Control

Mechanical control is the use of a physical barrier or instrument to control a problem or pest.

12.0 Sanitary Control

Sanitary controls ensure clean fields and the removal of parts of the plant that will attract or favour the development of the pest.

13.0 Biological Control

Biological control relies on naturally occurring organisms or substances produced by organisms to control pest populations.

14.0 Chemicals

Chemicals are substances, elements or compounds used in fertilization, crop protection, conditioning or sanitation.

15.0 Pest

Organisms in the environment that compete with man or crops for food, shelter, etc. A pest can be an insect, fungus, bacteria, animal or plant.

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16.0 Pesticides

A pesticide is any substance or mixture of substances intended for: preventing, destroying, repelling, or mitigating any pest. Though often misunderstood to refer only to insecticides, the term pesticide also applies to herbicides, fungicides, and various other substances used to control pests. Pesticides are not always chemical substances and can also be biological pesticides, e.g. those formulated from bacteria, viruses, etc.


17.0 Research Department

Research Department refers to the Research Department of The Banana Board or the Banana Board. Recommendations on procedures, dosage of pesticides, fertilizer and chemical substances must be made by the Research Department based on past research and on-going or timely sampling and testing.

18.0 PPE

Plant protection equipment

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Quality Management System

1.0 Summary

The GAP concerns to be addressed in this manual are as a result of concentrated analysis by the Certification Unit of the Research Department of the factors which have critical environmental impact on the farms and how resulting issues and problems can be solved equitably through cooperation and consultation with all stakeholders. We recognize that this process is in its initiation phase and we are committed to its continued growth, improvement and maturity.

GAP is very important to the company with regard to the growing of bananas on farms. Our existence depends directly on our interaction with the environment. Therefore, respect for the environment is essential for sustainable farming practices. While we are cognizant of our responsibility to protect the environment, our environmental goals must co-exist with other needs, such as the need to produce bananas with competitive yields and price, in order to remain viable producers.

2.0 Banana Production and the Environment

There is growing importance for the coexistence of sustainable banana production and the natural environment. Because of this symbiotic relationship, respect for the environment has always been essential for good farming. If the soil is not treated as a fundamental fragile resource, then it will eventually no longer be able to support productive and viable farming. If water sources are contaminated, the effects are far reaching for aquatic life, livestock and humans who use the streams.

A conducive or favourable environment is the basis for sustainable agriculture. A conducive environment will not always depict the characteristics of the natural environment. Farming essentially makes varying adjustments to the environment. Agricultural soils, even when all the necessary farming practices are carried out will alter soil fertility. The use of farming material means there will be modifications to the environment. The formation, transport, use and/or disposal of farm products and by products all have environmental effects. Therefore, environmental goals must foster co-existence to promote harmony and minimize conflicts when possible.


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3.0 Key Environmental Issues include:

- 3.1 Site Selection
- 3.2 Soil Erosion
- 3.3 Drainage
- 3.4 Water Management
- 3.5 Nutrition and Soil Nitrates / Phosphates
- 3.6 Weed Control
- 3.7 Agricultural Pesticide Management
 - a. Storage
 - b. Record of Use
 - c. Training
 - d. Treated Areas
 - e. Sigatoka Control
 - f. Waste disposal
 - g. Monitoring Impact on Workers and the Environment
- 3.8 Wildlife
- 3.9 Integrated Pest Management
 - a. Prevention / Monitoring / Intervention
 - b. Fallow Lands
 - c. Ditches, Dry River Beds, Canals, Protected Trees & Field Margins
 - d. Farm Buildings
 - e. Areas of Environmental Interest/Designated Vulnerable Areas
- 3.10 Research and Development for Continual Improvement

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3.1 Site Selection

Site selection addresses the effect of the farm on the local communities. How will the development affect the availability of the amenities and will it provide opportunities for growth and development of the people?

Environmental conservation and the preservation of flora, fauna and wildlife are also of great concern to the Banana Board. Forest or protected areas are not used for farming.

On supply farms, strips of land are maintained to avoid the contamination of waterways when applying pesticides. Tree crops and ornamental planting in buffer zones are encouraged to increase biodiversity and economic diversification. Monitoring is carried out bi-annually to ensure that no harm is being done to the environment by farms.

3.2 Soil Erosion

The erosion of topsoil is synonymous with depletion of soil nutrients and organic matter. Erosion by water causes build-up of undesirable sediments in rivers, streams, primary and secondary drains. Plant nutrients and other compound attached to eroded soil can cause contamination and excessive plant growth in waterways. Plant residues from harvesting and cultural practices are allowed to remain on the soil surface without interfering with the plant row. These residues help to safeguard the soil surface against wind and rain damage. A sophisticated drainage network promotes effective water movement which prevents removal of topsoil. (See drainage) QEM.

Windbreaks are planted to support the reduction of wind velocity, to prevent the incidence of soil erosion and plant damage.

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3.3 Drainage

It is imperative to establish a drainage network to facilitate the desired water movement necessary to maintain field capacity. The drainage network consists of surface trenches that are geared towards removing floodwater and prevent erosion, transmission of disease-causing organisms and eliminate physical damage. Effective drainage will assist in nutrient absorption, moisture control and provide adequate root- growth in the crop.

3.4 Water Management


Irrigation and drainage alter the normal seasonal pattern of water flow to streams and rivers. The use of ground water is monitored by the regulatory agency to ensure that conflict with societal and community norms is minimized.

The successful production of banana relies on the existence and utilization of effective drainage and irrigation networks. These are necessary because there is excess precipitation and run off during the rainy periods; as well as severe drought at other times. Irrigation is critical to optimize production by maintaining adequate soil moisture levels to assist in nutrient absorption.

Drainage networks are established to allow for free movement of excess water. The network includes secondary drains, which remove run off from the immediate field. The secondary drains are connected to primary drains, which are designed to channel floodwater away from the plantation.

To maximize efficient use of water, some farms in drought-prone areas are equipped with drip irrigation systems. Other farms are rain-fed or have other forms of irrigation. Drainage and irrigation are necessary environmental modifications to maintain viability in banana farming.

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3.5 Nutrition

3.5.1 Nutrients and Fertilization

An initial soil and leaf analysis is done to establish the nutrient status of the area prior to cultivation. The nutrient status is used to develop a fertilizer regime for the crop determined by the technical officers from the Banana Research Department. We are cognizant that bananas extract very high amounts of nutrients from the soil, especially nitrogen and potassium. We therefore ensure that correct balance is applied in frequent small doses where possible to avoid leaching from the soil and loss to the atmosphere. Incorrect fertilizer application can result in nutrient imbalances thus impacting negatively on plant growth and ultimately increasing the costs of production. All fertilizers must be stored in a secure location, which minimizes the risk of pollution and mishaps.


3.5.2 Nitrates

Soil nitrates are managed to guarantee adequate crop productivity, while minimizing surface and ground water contamination

3.5.3 Phosphates

Phosphate is a major pollutant in streams and rivers. However, unlike nitrates, phosphates are held tightly to soil particles. Phosphates fertilizer is unlikely to reach the water source unless the soil is eroded. Therefore, our soil erosion management minimizes the potential of phosphate pollution

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3.6 Weed Control

The control of weeds is very critical to optimal crop plant growth rate and pest build-up. Consequently, the farm management give the requisite attention to the control of weeds. The procedure utilizes labour and appropriate machines to achieve desirable controls. Manual and mechanical controls also prevent the contamination of waterways and reduce chemical build-up in the soil.

Control by physical barrier is also carried out by using residual plant materials to cover all exposed topsoil in the plantation, with the exception of a 30 centimetre radius around each mat. This prevents re-growth of weeds, especially when the leaf canopy of the banana crop interlocks.

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3.7 Pesticide Management

All pest and disease management must be in accordance with Integrated Crop Management Systems. Due to the wide variety of pests and diseases, which attack bananas, the use of pesticides is necessity in order to produce economic yields. These pesticides, if used, must be handled within the manufacturers' guidelines and the recommendations of the Research Department. Only pesticides approved for entry into the EU, UK and US are to be applied on the farm. These pesticides must also be approved for use in Jamaica by the Pesticide Control Authority of Jamaica.

3.7.1 Storage

All pesticides must be stored in a safe, secure location away from animals, food and water sources. Only authorized persons should be permitted access. Storerooms should have a sign outside indicating that chemicals are present. They should have adequate ventilation, be bunded to contain leaks or spillage, provide comfortable access to and visibility of chemicals. Shelving should be installed for small items where necessary. Powders should be stored above liquids. Washing facilities for storeroom personnel should also be available nearby.

3.7.2 Record of Use

Pesticide Use Forms must be used to record all pesticide applications on the farm. General pesticide inventories of all stock must be kept current.

3.7.3 Training

All persons involved in the handling and application of pesticides must be trained and equipped with the necessary clothing and equipment. Suitable wash facilities should be made available to personnel handling pesticides both for personal hygiene and for washing protective clothing and equipment.

3.7.4 Treated Areas

Access to recently treated areas is prohibited for specific periods and appropriate signs posted.

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3.7.5 Sigatoka Control

Notice of spraying must be given at least one day in advance to the workers and notices of effected spray are placed at strategic locations on the farm. The mixing areas must be secure and protected. All areas to be sprayed must be evacuated before the operation.

3.7.6 Waste disposal


Waste must be disposed of without contamination of water sources. All empty pesticide containers should be punctured, crushed or returned to the manufacturers for disposal. They should be kept secure and clearly marked before return. All expired chemicals must be returned to their suppliers for proper disposal.

3.7.7 Monitoring Impact on Workers and the Environment

All water sources must be checked bi-annually for pesticide contamination at specific locations by or on behalf of Growers. The tests must be done by authorized personnel and records kept of their findings.

Workers will have the right to medical attention if the need arises. It is mandatory that all Growers have a First Aid facility to attend to minor mishaps. Workers handling pesticides are given cholinesterase tests once per year.

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3.8 Integrated Pest Management (IPM)

*Integrated Pest Management (IPM) forms the basis for guidance in the control of pests. **The IMP utilizes prevention, monitoring and intervention methods.** Frequent and thorough evaluations of pest control measures are done to determine the effectiveness of each methodology employed and the impact it might have on the environment with specific emphasis on the relationship to the eco-system.*

*Approved chemicals are applied only in instances where evaluation of biological and climatological disease parameters suggest that the infection / infestation is at a critical level and can trigger a potential outbreak. Consequently, crop inspection and **monitoring** are critical. Treatment or **intervention** is not always chemical, but can be cultural, mechanical, biological or simply good husbandry practices. If these **preventative** approaches are used to keep problems (disease, defect or disorder) below critical levels. However, despite the best of systems, conditions may arise that favour the development of pests. In these cases it will be necessary to use “rescue” response to reduce the pest populations to manageable levels.*

Inherent in the IPM programme is the Sigatoka (Leaf spot) control programme. The fields are carefully monitored each weekly or fortnightly and data collected and analyzed. At threshold levels or critically worsening trends chemicals are applied. This has the benefit of reducing the overall volumes of hazardous chemicals and related costs and ensures better protection in the long run.

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Maintaining correct crop population levels in the field helps to reduce the growth of weeds; therefore reducing the volume of approved herbicides used, and favours increased production. Further, the use of plant material waste to cover open ground surfaces reduces weed re-growth. Weed control interventions (manual or chemical) is implemented only when the weed growth is at critical height and stage of maturity. Chemical control is implemented only with approved products. Control of weed growth in drains is maintained manually or mechanically only. This prevents the spread of chemicals in waterways, protects the water source, and does not cause the excessive denudation of the drain banks and therefore protects the drains from erosion, especially during heavy floods.


When replanting the plantations, growers are encouraged to fallow fields for about six months. This breaks the cycle of nematode infestation. When replanted with nematode free plants, nematode infestation will be delayed significantly, resulting in reduction in the use of approved nematicides.

3.9 Wildlife

Wildlife has always been an integral part of rural existence. Jamaica is blessed with a diversity of wildlife habitats, some of which are in close proximity to farms. Wildlife contributes to specific banana pest populations, for example rodents (rats). These pests damage the fruits and can be a vector of specific human diseases (for example leptospirosis).

Consequently, the management of the processing plants mitigates against damage by rodents and birds etc. Therefore the banana production is not significantly impacted by wildlife populations.

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3.10 Research and Development

The Research Department (RD) of the Jamaica Banana Board is entrusted with the mandate to avail the Jamaica Banana Industry with the most appropriate and advanced technologies; and to monitor national and international standards of commercial banana production. To achieve this overall objective the activities of the RD consist of the following:

- Input products, operational procedures and planting materials are tested; adapted to Jamaican conditions; transferred to the producers and recommended for consideration in national regulations where appropriate;
- Production systems that are in use are closely monitored in order to anticipate and prevent possible problems.
- Training of the industry's technical personnel.
- Diagnostic services and investigations of emerging or unexpected problems on farms. Solutions are recommended or further research proposed for future study.
- The RD also has the responsibility to ensure that standards for national Farm Certification conform to international standards and are consistently satisfied by all export farmers.

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Procedure

Quality Management System Manual Title: Control of Documents		Document Number: CD 2 Revision Date: 06/12/07	
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Control of Documents


1.0 Purpose

- 1.1 To ensure that copies of the latest issue of applicable National and International Standards and Statutory Regulations are available and THE BANANA BOARD Officers and Growers are aware of the relevant requirements.
- 1.2 To ensure Customer Specifications are current and up to date.
- 1.3 To ensure the System documents are controlled and implemented so that all stakeholders work to an approved Management System and the services provided by the company meet the specified requirements.

2.0 Procedure

- 2.1 A register of applicable National and International Standards and Statutory Regulations is maintained and circulated to each Grower.
- 2.2 The register is reviewed at least every eighteen months or whenever necessary to ensure that amendments to standards are identified and obtained.
- 2.3 Amendments are filed with the original standards. When an original standard is completely superseded it is removed and destroyed or prominently marked "**OBSOLETE**" and filed separately.
- 2.4 New Standards and Regulations or Amendments to existing ones are obtained through:-
 - 2.4.1 JPF
 - 2.4.2 EU and GlobalGAP Web sites
 - 2.4.3 Pesticides Control Authority of Jamaica
 - 2.4.4 A memo summarizing new and amended standards is issued to relevant personnel.

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3.0 Responsibilities

3.1 Director of Research

- 3.1.1 *Is responsible for approving all changes to operations activities*
- 3.1.2 *Ensures no unauthorized changes are made in any system process.*
- 3.1.3 *Ensure no unauthorized new forms are introduced to the management system.*
- 3.1.4 *Once changes are finalized the Document Change Form is filled out indicating the changes and the reason for the change.*
- 3.1.5 *Issues new the form to the **Officers and Growers**.*
- 3.1.6 *Is responsible to control the preparation, amendment, authorization and issue of the Management System Documentation.*

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The Banana Board

		Procedure	
Quality Management System Manual Title: Control of Documents		Document Number: CD 2 Revision Date: 06/12/07	
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3.2 Customer Specifications

- 3.2.1 Customer Specifications are checked by the *Field Managers/Growers*. Any queries are discussed with Research Department and a note made in a file.
- 3.2.2 A list of up to date specifications and amendments is maintained.


3.3 Nominated Holders

*It is the responsibility of the **nominated holders** to control the document in their keeping and encourage staff under their control to refer to them and to implement and maintain the procedures defined by the documents.*

4.0 Procedure

- 4.1 Any person may suggest to the Director of Research the need for amendments or additions to the documents. The need for an amendment or addition is reviewed with the relevant Functional Manager and the Director of Research. If accepted, a person is nominated to amend or prepare the document.
- 4.2 Every page of each document shows its identity and issue status.
- 4.3 The Director of Research authorizes new and amended documents.

Approved by: **Director of Research**
The Banana Board

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- 4.4 *Copies of the manual are issued with a current Issue Document Register to nominated holders. A circulation list is maintained for each set of documents.*
- 4.5 *The masters of each document are filed. Invalid and obsolete masters are prominently marked "OBSOLETE" and filed at the Research Department; all others are taken out of circulation and destroyed.*
- 4.6 *The nominated holders file new and amended copies of the document. Invalid and obsolete documents are promptly removed and destroyed. Staff under the control of nominated holders is made aware of the contents of the document and are encouraged to refer to them. The procedures defined by the document are implemented and maintained. Amended documents are accompanied by a document history noting the reason for change.*
- 4.7 *No copies of any document are made without the prior authority of the Director of Research. Every page of all such copies is prominently marked 'Uncontrolled' these are for reference only.*
- 4.8 *Uncontrolled copies of documents are issued to outside organizations with the prior approval of the Director of Research. All such copies are current at the time of issue but do not subsequently receive amendments except at the specific request of the holder.*

Approved by: **Director of Research**
The Banana Board



Procedure

Quality Management System Manual Title: Procedure for Minimizing Discharge to Air, Water Bodies and Sewers		Document Number: PMD 2 Revision Date: 06/12/07	
Department:	Implementation Date: 01/03/08	Issue #: 2	Sheet 1 of 1
Author:	Ownership:	Approved & Released by Director of Research	

Minimizing Discharge to Air, Water Bodies and Sewers

1.0 Purpose

- 1.1 To measure the quantity and Management of pollutants coming from processes and then design emission controls and other methods to minimize impacts.

2.0 Scope

- 2.1 This procedure applies to point and non-point sources of pollutants.

3.0 Responsibilities

- 3.1 It is the responsibility of the **Research Department** to set up monitoring programs for discharges, to oversee data collection and to suggest discharge minimization opportunities.
- 3.2 **The Growers** are responsible for collecting routine samples, maintenance of equipment and suggesting minimization ideas.
All equipment will be carefully maintained.

4.0 Audits

- 4.1 Routine audits of the operation will be made and adjustments carried out to continually reduce emissions, chemicals and wastes. The audits would be done in response to special problems and scheduled or routine audits for regulatory compliance.

5.0 Special Problems

- 5.1 Unauthorized discharges, spills and other problems must be reported immediately to company management and to the regulatory authority.

6.0 Related Documentation

- 6.1 Water Monitoring Data
- 6.2 Maintenance Records
- 6.3 Water Usage Report

Approved by: **Director of Research**
The Banana Board



Procedure

Quality Management System Manual Title: Traceability		Document Number: T 2 Revision Date: 06/12/07	
Department:	Implementation Date: 01/03/08	Issue #:2	Sheet 1 of 1
Author:	Ownership:	Approved & Released by Director of Research	

Traceability

1.0 Purpose

To ensure a grower-specific code number is affixed to the box and invoice. Guarantee a system to trace each box packed back to its source.

2.0 Procedure

Each Grower or his agent should ensure the assigned boxing plant number is affixed to the box and invoice. Boxes intended for export must be visibly marked with code number and pack date. There must clear demarcation between boxes marked for export and those intended for other markets.

Approved by: **Director of Research**
The Banana Board



Procedure

Quality Management System Manual Title: Planning and Control of Chemicals and Their Application		Document Number: PCCA 2	
		Revision Date: 06/12/08	
Department:	Implementation Date: 01/03/08	Issue #: 2	Sheet 1 of 1
Author:	Ownership:	Approved & Released by Director of Research	

Planning and Control of Chemicals and Their Application

1.0 Purpose

To ensure that the recommended chemicals are applied in correct quantities to designated target areas when required. To ensure this is controlled and documented, work instructions are issued to field workers.

2.0 Procedure and Responsibilities

2.1 Grower/Functional Manager:

- 2.1.1 Determines where and when treatment is required using local information or data supplied by technical evaluation.
- 2.1.2 Writes a written request for the amount of chemical required (specific to functional managers).
- 2.1.3 Ensures the chemical is transported to the designated area to be applied.
- 2.1.4 Directs the worker to the area of application and ensures proper equipment/safety gear is worn and reiterates safety precautions (specific to functional managers).
- 2.1.5 Records the amount of chemical used on the **Daily Chemical Record Form**.*
- 2.1.6 At the end of the exercise returns to stores any excess chemical, and adjusts documentation to suit.

2.2 Grower/ Functional Managers /Storekeeper of Stores

(in cases of large farms or community stores)

- 2.2.1 Upon receipt of request ensures chemical delivered as per request.
- 2.2.2 Keeps a copy of the request.

2.3 Grower/Field Worker

- 2.3.1 Applies chemical according to instructions

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The Banana Board



Procedure

Quality Management System Manual Title: Procedure for Storage of Chemicals		Document Number: PSC 2 Revision Date: 06/12/07	
Department:	Implementation Date:01/03/08	Issue #: 2	Sheet 1 of 1
Author:	Ownership:	Approved & Released by Director of Research	

Storage of Chemicals

1.0 Purpose

To ensure inventory items are stored in the appropriate manner. Make sure all chemicals are identified and accounted for in all phases of the operation.

2.0 Scope

This procedure covers all incoming stocks, both hazardous and non-hazardous

3.0 Responsibilities


Grower / Store Supervisor / Functional Manager is responsible to ensure that the procedures are carried out as documented.

4.0 Procedure

4.1 Storage Conditions / Procedure

- 4.1.1 *Chemicals must be stored above ground / floor level.*
- 4.1.2 *If shelving is present powders must be stored above liquids.*
- 4.1.3 *If pallets are present powders must be stored on pallets at least one meter away from any liquids.*
- 4.1.4 *There must be a gap of at least 20 centimetres between different kinds of powder or liquid.*
- 4.1.5 *Each type of chemical must have a designated, labelled storage area.*
- 4.1.6 *Fertilizers must not be stored in the same room as other chemicals.*
- 4.1.7 *Acids must not be stored in same room with pesticides.*
- 4.1.8 *Packing material must be stored in a separate room from chemicals.*

Approved by: **Director of Research**
The Banana Board

		Procedure	
Quality Management System Manual Title: Procedure for Handling Empty Chemical Containers		Document Number: PHECC 2 Revision Date: 06/12/07	
Department:	Implementation Date: 01/03/08	Issue #: 2	Sheet 1 of 2
Author:	Ownership:	Approved & Released by Director of Research	

Handling Empty Chemical Containers

1.0 Purpose

- 1.1 *To ensure that chemical containers are properly handled so that they do not impact the environment or injure employees.*
- 1.2 *To encourage the reuse and recycling of empty chemical containers.*

2.0 Scope

- 2.1 *This procedure covers any empty container or one with residue that housed a chemical that might have an impact on the environment or human health.*
- 2.2 *This procedure covers all types of hazardous chemicals or fuels whether they are in the liquid or solid state.*

3.0 Responsibilities

- 3.1 **Growers** will ensure containers are triple rinse and returned to the Banana Trading Company
- 3.2 **Manager of Banana Trading Company/ AIBGA / material input provider** will arrange contracts with chemical suppliers to return as many containers as possible.

Approved by: **Director of Research**
TheBanana Board



Procedure

Quality Management System Manual Title: Procedure for Handling Empty Chemical Containers		Document Number: PHECC 2	
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4.0 Procedure

Since most empty chemical containers may still have some residue, they must be handled properly to minimize injury and impact to the environment.

4.1 Training

Train relevant personnel concerning this procedure and provide personal protective equipment (PPE) for when it is carried out.

4.2 Complete Use

As much chemical as possible will be removed from containers before disposal. Disposal will take the form of returning to supplier or recommended disposal by the supplier.

4.3 Handling of Residue

The residue will be used in the operation if possible. If this cannot occur then the residue will probably have to be treated as hazardous waste and should not be placed in the common sanitary landfill.

4.4 Container Cleaning/Washing

4.4.1 Triple rinse container

4.4.2 Containers for return must be placed in a specific area of the stores

4.4.3 Inventory must be kept

5.0 Related Documentation

Receipts from suppliers / agents showing pickup of empty container destined for reuse or recycling.

Approved by: **Director of Research**
The Banana Board



Procedure

Management & Environmental Manual Title: Managing Spills		Document Number: PMS 2 Revision Date: 06/12/07	
Department:	Implementation Date: 01/03/08	Issue #: 2	Sheet 1 of 2
Author:	Ownership:	Approved & Released by Director of Research	

Managing Spills

1.0 Purpose

To minimize soil contamination, waste, potential damage and to ensure safe clean-up in the event of a spill.

2.0 Scope

This procedure deals with the control, containment and clean up of spills.

3.0 Responsibilities

- 3.1 *It is the responsibility of the **Grower/ Store Keeper** to ensure that materials to perform clean-up activities are present at all times and that the Material Safety Data Sheet is displayed in the storeroom. The **Grower/ Store Keeper** should ensure that safety gear is available.*
- 3.2 *Ensure that containers are adequately sealed.*
- 3.3 *It is the responsibility of the grower/ operator to make sure that equipment being used to apply chemicals is not leaking.*
- 3.4 *It is the responsibility of the **Grower/ Driver** to ensure that chemicals being transported are secure.*
- 3.5 *It is the responsibility of the **Grower/ his agent** to ensure that if and when he handles chemicals it is done in a safe manner.*
- 3.6 *It is responsibility of the **Grower /Functional Manager** to ensure that material to perform clean-up activities is available at all times.*

Approved by: **Director of Research**
The Banana Board



Procedure

Quality Management System Manual Title: Managing Spills		Document Number: PMS 2	
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4.0 Materials Needed

4.1 Sawdust or sand, shovel, broom, empty container.

5.0 Procedures

5.1 Control

- 2.6.1 *If the container has been overturned, place it upright*
- 2.6.2 *If it is leaking or broken, place contents in another container if possible*
- 5.1.3 *If it is leaking from the bottom and it is properly sealed turn the container upside down.*

5.2 Contain

- 5.2.1 *For spills on concrete floors make a barrier of sawdust or sand around the spill.*
- 5.2.3 *For spills on soils dig a trench around spill and put dirt on spill.*
- 5.2.4 *For large, highly concentrated spills mix with lime before clean up.*
- 5.2.5 *Stake out spill area so that people and animals do not walk in it.*

5.3 Clean-up

- 5.3.1 **DO NOT** use water as it will spread out the spill.
- 5.3.2 *Cover the spill with absorbent material, example: saw dust, sand or dirt.*
- 5.3.3 *After absorption has taken place remove and bury absorbent material with pesticide.*

Approved by: **Director of Research**
The Banana Board



Procedure

Quality Management System Manual Title: Planning and Control of Sigatoka Management		Document Number: PCSM 2	
		Revision Date: 06/12/08	
Department:	Implementation Date: 01/03/08	Issue #: 2	Sheet 1 of 1
Author:	Ownership:	Approved & Released by Director of Research	

Planning and Control of Sigatoka Management

1.0 Introduction

This procedure describes the way Sigatoka surveys are done to monitor the development of the disease in order to prevent excessive defoliation from heavy leaf spotting, along with coverage checks to monitor distribution of aerial coverage.

2.0 Responsibility

Disease Management Inspector/Grower

3.0 Procedure

- 3.1 *Routine checks are made of fields, especially those known to be “Hot Spots”, and the data is recorded and analyzed according to the details of the method used. (Youngest Leaf Spotted & Cronshaw)*
- 3.2 *Information recorded is kept in the farm office, and records should be available on request.*
- 3.3 *Formal notices are placed, at the designated areas, of the intent to spray on the agreed date based on the results of the surveys.*
- 3.4 *Make the necessary preparation for chemical application.*
- 3.5 *Checks are made of fields, especially those known as “Hot Spots” after spraying.*

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The Banana Board



Procedure

Management & Environmental Manual Title: Procedure for Re-entry to field after spraying		Document Number: PRFS 2 Revision Date: 06/12/07	
Department:	Implementation Date 01/03/08	Issue #: 2	Sheet 1 of 1
Author:	Ownership:	Approved & Released by Director of Research	

Procedure for Re-entry to Field after Spraying

1.0 Purpose

The purpose of this procedure is to provide guidelines for re-entry to fields after pesticide application.

2.0 Responsibility


Grower/ Supervisor/ Functional Manager

3.0 Procedure

- 3.1. *The interval for re-entry to fields after pesticide application is up to one (1) day. The specific re-entry period for each pesticide is detailed on the record sheets and posted on sign. No employee is to be instructed to re-enter any field after pesticide application without appropriate protective gear before the requisite interval.*

- 3.2. *The interval for re-entry to fields after pesticide application for pregnant and lactating mothers is two(2) days. No worker in this category is to be instructed to re-enter any field after pesticide application before the requisite interval.*

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The Banana Board

		Procedure	
Management & Environmental Manual Title: Control of Monitoring & Measuring Device / Calibration of Equipment		Document Number: CMMD 2 Revision Date: 06/12/07	
Department:	Implementation Date: 01/03/08	Issue #: 2	Sheet 1 of 2
Author:	Ownership:	Approved & Release by Director of Research	

Control of Monitoring & Measuring Device / Calibration of Equipment

1.0 Purpose

To ensure that inspection, measuring and test equipment are controlled and calibrated within acceptable limits on a regular basis.

2.0 Responsibility

Grower/ Functional Manager/ Technology Transfer Officer

3.0 Procedure

- 3.1 All items of inspection, measuring and test equipment are clearly marked with a reference number.
- 3.2 Records of inspection equipment are maintained for each item:
 - reference number
 - description
 - location
 - calibration frequency
 - method of calibration
 - calibration results
- 3.3 Each quarter the calibration records are reviewed. The equipment calibrated, date and method and recorded.
- 3.4 At the start of each harvesting day each scale is checked against standard weights which are kept in a secured place. The results are recorded on the prescribed form provided.
- 3.5 Calibration certificates are obtained and filed for all equipment calibrated by approved agencies.

All calibrations are made using equipment with traceability to nationally recognized standards. Where no such standards exist, the method of calibration defines the basis used.

- 3.6 The result of external calibration is entered in the calibration record.

Approved by: **Director of Research**
The Banana Board




Procedure

Management & Environmental Manual Title: Control of Monitoring & Measuring Device / Calibration of Equipment		Document Number: CMMD 2	
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- 3.7 *Where practical, each calibrated equipment should be marked with a label showing the date of calibration, agency and date of next calibration. Where such a label is not practical, the calibration status is shown in calibration records.*
- 3.8 *Equipment which fails calibration is labelled “reject” and withdrawn from use until serviced, re-calibrated or removed totally.*
- 3.9 *Equipment which has passed its calibration date or its accuracy is suspect, is withdrawn from use until calibrated.*
- 3.10 *If an item of equipment is found to be out of calibration accuracy, the use of that equipment should be discontinued until the situation is corrected.*
- 3.11 *Calibration activities and records are checked periodically or every three months, minimum. Accuracy and fitness for use is maintained by storing the calibrated equipment in a designated area of the farm office.*

Approved by: **Director of Research**
The Banana Board

		Procedure	
Management & Environmental Manual Title: Corrective Action and Non-conforming Products		Document Number: CA 2 Revision Date: 06/12/07	
Department:	Implementation Date: 01/03/08	Issue #: 1	Sheet 1 of 7
Author:	Ownership:	Approved & Release by Director of Research	

Corrective Action and Non-conforming Products

1.0 Purpose


The purpose of this procedure is to establish and outline the process for identifying, documenting, analyzing non-conforming products and implementing corrective action.

2.0 Scope

This procedure applies to:

- 2.1 Nonconforming materials delivered by suppliers*
- 2.2 Nonconforming banana product*
- 2.3 Customer complaints*
- 2.4 Non-conformance found during auditing of the Management System, or during routine surveillance of the department operation.*
- 2.5 Corrective action*

Approved by: **Director of Research**
The Banana Board

		Procedure	
Management & Environmental Manual Title: Corrective Action And Non-conforming Products		Document Number: CA 2 Revision Date: 06/12/07	
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3.0 Responsibility


THE BANANA BOARD Internal Auditor / Technology Transfer Officers/ Growers

- 3.1 *During daily monitoring of all production operation, where there is deviation from instruction, a corrective action must be identified and an opportunity for improvement should be made.*
- 3.2 *Ensures that the CAR is carried out.*
- 3.3 *Ensures a corrective action response is carried out within 0-28 days.*

4.0 Procedure

- 4.1 *In-coming materials and bananas are inspected and detections are recorded.*
- 4.2 *Non-conformances may be detected in material purchased from a supplier or in bananas produced.*
- 4.3 *When nonconforming material or product is detected, the person responsible will identify and isolate where practical any non-conforming items. This will prevent unauthorized use, delivery or mixing with conforming products.*
- 4.4 *That person (**THE BANANA BOARD Internal Auditor, Technology Transfer Officers or Grower**) will then raise a Non-conformance and Corrective Action Report*

Approved by: **Director of Research**
The Banana Board

		Procedure	
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5.0 Recurring Non-conformances

- 5.1 The **THE BANANA BOARD Auditors** will periodically review the Non-conformance and Corrective Action Reports to identify recurring Non-conformances or unsuitable trends.
- 5.2 Repetitive non-conformances in product are documented and Corrective Action Report raised by the **Certification Supervisor**.
- 5.3 The report will be forwarded to the **Director of Research**, seeking action to identify the cause of the recurring non-conformance and action necessary to prevent a recurrence.
- 5.4 **Director of Research** will determine whether the recommended corrective and preventative action is satisfactory and will verify that the actions have been satisfactorily implemented.

6.0 Customer Complaints

6.1 Director of Research

- 6.1.1 Complaints may be recorded on the CAR form.
- 6.1.2 Where possible, for verbal complaints, the customer is given an immediate response. In case of a written complaint the customer is contacted by email telephone and a response is given in respect of the complaint.
- 6.1.3 The action taken is recorded, which is then signed and filed and a copy on the CAR form given to the Grower where the **problem** originated.

Approved by: **Director of Research**
The Banana Board



Procedure

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7.0 Product Defects

7.1 Threshold levels includes:

- 7.1.1 - Crown Rot 2%
- 7.1.2 - Ripe and Turn 2%
- 7.1.3 - Scars 7%
- 7.1.4 - All defects combined 10%

7.2 Corrective Action for product defect is raised when:

- 7.2.1 - Crown Rot $\geq 2\%$
- 7.2.2 - Ripe and Turn $\geq 2\%$
- 7.2.3 - Scars $\geq 7\%$
- 7.2.4 - All defects combined $\geq 10\%$

8.0 Management System Non-conformance through Audits


When non-conformances in the Management System are identified through routine or unscheduled audits, Internal Audits/Inspections or Corrective Action Report, the auditor or **Certification Supervisor** will prepare and issue the report

8.1 Raising a Non-conformance and issuing a Corrective Action Report (CAR).

8.1.1 Internal Auditor

The Internal Auditor issues a corrective action request if there is any deviation from any planned arrangements contained in the documented system during an internal audit.

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The Banana Board

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8.1.2 Officer/Grower/Director of Research

Issues a corrective action request if there is any deviation from any planned arrangements contained in the documented system during a routine inspection.

8.1.3 Grower

Issues a corrective action request if there is any deviation from any planned arrangements contained in the documented system during a routine monitoring.

8.1.4 Director of Research

Issues a corrective action request if there is any deviation from any planned arrangements contained in the documented system during a Management Review, and Non-Conformance Meeting.

8.1.5 Grower/Stores Manager/Functional Manager

Issues a corrective action request depending on the nature of non-conforming purchased material.


8.2 Actions to Correct Non-conformances

8.2.1 Action by the person who raises it.

Complete the report (where applicable) as follows:

- a) Assign CAR number*
- b) Date of audit*
- c) Product/process description*
- d) Audit No./Procedure audited*
- e) Immediate corrective action if applicable*
- f) Type and description of non-conformance*
- g) Root cause – date for completion of the corrective action*
- h) Action prevent occurrence and follow-up required*
- i) Close out date*

Approved by: **Director of Research**
The Banana Board

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8.2.2 Action by the **issuer of the CAR**

The issuer will complete the CAR status log.

8.2.3 Action by **referred personnel**

On receipt of the CAR, the referred personnel shall complete the report as follows:

- a. Immediate action to be taken. State the immediate action to be taken to rectify the problem (include details on disposal), if applicable.*
- b. With the exception of the Internal Auditors each function responsible for issuing CARs can indicate measures for corrective action if it is deemed appropriate.*

8.3 Preventative Action


8.3.1 The action to prevent recurrence must be filled out.

8.3.2 When a follow-up check indicates that the actions taken have not been effective in correcting the non-conformance and / or preventing recurrences, this will be recorded in the "follow-up" section of the CAR and will be closed out.

8.3.3 The continuing non-conformance will be re-addressed by a new CAR. The number of the new CAR will be crossed referenced to the OLD CAR and vice versa.

*8.3.4 Should the subsequent follow-up audit indicate that the action taken is still unsatisfactory, the CAR will be forwarded to **the Director of Research** for final resolution.*

Approved by: **Director of Research**
The Banana Board

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8.4 Monitoring the incomplete CAR

The **Officer** shall review the incomplete CAR on a regular basis and should a response to any CAR be overdue, a reminder will be sent to the referred personnel requesting a response.

8.5 Control of Health & Safety Issues


This element establishes a procedure to control and monitor non-conformances related to safety issues.

This element includes all the processes associated with safety and includes events such as accidents, near misses and unsafe work practices.

A CAR should be generated when:

- 8.5.1 Any non-compliance is promptly detected and identified.*
- 8.5.2 An unsafe work practice or situation is observed.*
- 8.5.3 An incident or accident is observed.*
- 8.5.4 Irregularities or recurring event is observed.*

Approved by: **Director of Research**
The Banana Board

		Procedure	
Management & Environmental Manual Title: Control of Records		Document Number: CR 2 Revision Date: 06/12/07	
Department:	Implementation Date: 01/03/08	Issue #: 2	Sheet 1 of 1
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Control of Records

1.0 Purpose

To ensure that related records are controlled, stored and protected for a defined period of time.

2.0 Responsibility and Procedure

2.1 Director of Research controls Master Lists

The Master Lists identifies:

- 2.1.1 *Management Procedure reference*
- 2.1.2 *Name of record*
- 2.1.3 *Storage location*
- 2.1.4 *Filing sequence*
- 2.1.5 *Responsibility for storage*
- 2.1.6 *Retention period*

2.2 Nominated Holders

Records are filed in a way which allows for easy retrieval and are protected from loss or damage during storage. Records are retained for the defined periods and are not disposed of without the prior approval of a Director.

2.3 Grower/ Trader

Banana is exported. on individual or specific trader negotiation agreement. The negotiation is conducted by the trader. Previous necessary actions are stored in his office.

Approved by: **Director of Research**
The Banana Board



Procedure

Management & Environmental Manual Title: Internal Audits		Document Number: IA 2	
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Internal Audits

1.0 Purpose

To determine whether the Management System conforms to the international standard and the QMS requirements established by the organization and if the system has been effectively maintained.

2.0 Responsibilities and Procedures


2.1 Director of Research:

- 2.1.1 *Recruits personnel who are trained as Lead & Internal Auditors.*
- 2.1.2 *The auditors are independent of areas audited, and auditors cannot audit their own work.*
- 2.1.3 *Additional audits are added to the plan as necessary, as the result of reported deficiencies or to check the effectiveness of corrective actions cited from previous audits or from daily monitoring.*
- 2.1.4 *The audit report is reviewed for verification and signed if ok.*
- 2.1.5 *Audit Report is circulated to the relevant personnel.*

2.2 Lead Auditor:

- 2.2.1 *Verifies in advance that all personnel involved in the audit are available.*
- 2.2.2 *Compiles the audit plan with the audit team.*
- 2.2.3 *Conducts opening meeting*
- 2.2.4 *Before commencing audit the audit team refers to previous audit to check where previous problems occur.*
- 2.2.5 *Ensure the audits verify that process complies with the Management Systems and the international standard.*

Approved by: **Director of Research**
The Banana Board

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2.2.6 Ensures the audit is conducted using the checklist and relevant CAR forms are available.

2.2.7 Any non-conformances noted are brought to the attention of the manager/supervisor in charge of the process.

2.2.8 If applicable corrective action is agreed. If not CA is sought at the closing meeting. The auditor and auditee sign all CARs.

2.2.9 The findings and recommendations arising from the audit are recorded on the audit report.

2.2.10 Results of non-conformances are documented on CAR from.

2.2.11 Conducts closing meeting in which finding of the audits are discussed.

2.2.12 The Audit Report is forwarded to the Director of Research.

2.2.13 Follow-up on CARs

2.3 Audit Team

2.3.1 Follows the instructions of the Lead Auditors.

2.4 Growers/ Officers/Director of Research

2.4.1 Has responsibility to make sure corrective actions are closed out.

2.4.2 Has responsibility to effect preventative action.

2.4.3 Follow-up to make sure there are no recurrences.

Approved by: **Director of Research**
The Banana Board



Procedure

Management & Environmental Manual Title: Training		Document Number: T 2 Revision Date: 06/12/07	
Department:	Implementation Date: 01/03/08	Issue #: 2	Sheet 1 of 1
Author:	Ownership:	Approved & Released by Director of Research	

Training

1.0 Purpose

To ensure that training needs are identified, training is given and records are maintained.

2.0 Responsibilities and Procedure

Grower/Functional Manager/ Auditors / Officer

2.1 The following methods of training are used:

- 2.1.1 Previous experience and qualification.
- 2.1.2 Induction training.
- 2.1.3 On-the-job training
- 2.1.4 Internal and external training.

2.2 **All personnel** within a function or skill set are:-

- 2.2.1 Made aware of the total requirements of their tasks and the operational procedures within the area.
- 2.2.2 Made fully conversant with the Management procedures applicable to their tasks.
- 2.2.3 Continually monitored to ensure that they understand their duties and responsibilities and continually adhere to them.

2.3 The training needs of individuals are assessed annually against the needs of the company and the ability of each individual and training is initiated as necessary.

2.4 A training record is kept for each employee to verify education, experience, and training and skills.

Approved by: **Director of Research**
The Banana Board



Procedure

Quality & Environmental Manual Title: Managing Broken Glass / Hard Plastic		Document Number: BD2	
		Revision Date: 06/12/07	
Department:	Implementation Date: 01/03/08	Issue #:2	Sheet 1 of 2
Author:	Ownership:	Approved & Released by Director of Research	

Managing Broken Glass / Hard Plastic

1.0 Purpose

To ensure that products and employees are not contaminated or affected in the event of broken glass or hard plastic

2.0 Scope

This procedure deals with the control, containment and clean up of any broken glass or hard plastic.

3.0 Responsibilities

- 3.1 *It is the responsibility of the **Grower** or his representative to ensure that material to perform clean-up activities and relevant safety gears are present at all times.*
- 3.2 *Any incident that can affect the integrity of the fruit or the surrounding environment must be noted as a non-conformance. The **Grower or his representative** will check these daily.*
- 3.3 *It is the responsibility of the **Grower or his representative** to ensure that all glass bulbs are covered with a shield/shade.*
- 3.4 *It is the responsibility of the **Grower or his representative** to ensure that employees do not bring any glass into the working area, i.e. bottles, mugs etc.*
- 3.5 *It is the responsibility of **the Grower or his representative** to ensure that after any breakage that the area is properly cleaned*
- 3.6 *It is the responsibility of **the Grower or his representative** to ensure that a non-conformance report is written which should outline what happened, how the glass was cleaned up, how it was disposed of, the condition of the area after cleaning up, and confirmation by staff being checked that area is free from any glass contamination and no one was injured.*

Approved by: **Director of Research**
The Banana Board



Procedure

Quality & Environmental Manual Title: Managing broken glass / hard plastic		Document Number: BD2	
		Revision Date: 06/12/07	
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Author:	Ownership:	Approved & Released by Director of Research	

4. **Material needed**

Specially labelled brush, pan and box for broken glass, all of which must be kept at each location.

5. **Procedure**

In the event of a breakage a quarantine zone of 3 square metres must be set up.

All glass must be collected, placed in the glass box and dispose of safely in the bin.

Upon completion this brush and pan are to be put into the glass box so as not to reintroduce shards of glass back into the production areas.

Staff clothing and footwear must be checked to ensure they are free of any glass.

Any fruit affected by breakages MUST be disposed of.

***Grower or his representative** must check the affected area after the clean-up.*

Approved by: **Director of Research**
The Banana Board



Procedure

Quality & Environmental Manual Title: Accident Procedure		Document Number: AC2 Revision Date: 06/12/07	
Department:	Implementation Date: 01/03/08	Issue #: 2	Sheet 1 of 1
Author:	Ownership: Grower	Approved & Released by Director of Research	

Accident Procedure

1.0 Purpose

To ensure injuries are given expeditious and appropriate attention at all times.


2.0 Responsibilities

All employees/ Growers

3.0 Procedure

- 3.1 *On reaching the injured person notify Grower, immediate supervisor or manager and observe carefully*
- 3.2 *Keep calm-reassure the injured person*
- 3.3 *Avoid risk to yourself*
- 3.4 *The Grower, farm or functional manager transports the injured person to the office / packhouse for observation. However, if injury is considered to be serious transport worker to doctor or hospital.*

Approved by: **Director of Research**
The Banana Board

		Procedure	
Quality Management System Title: Communicable Disease Control		Document Number: Com D1 Revision Date: 0	
Department:	Implementation Date: 01/03/08	Issue #: 1	Sheet 1 of 1
Author:	Ownership:	Approved & Release: By Director of Research	

Communicable Disease Control

1.0 Purpose

To ensure that workers who have communicable disease such as influenza, Tuberculosis etc. do not transmit the virus to other persons on the farm.

2.0 Responsibilities

Growers/ Workers


3.0. Procedure

3.1 *The farmer will inform the worker to notify him of any Communicable Disease / Form to fill out the relevant information.*

3.2. *The farmer will determine the number of days the worker is required to be absent from work by means of a doctor's certificate or by his/her discretion depending on the type of communicable disease.*

3.3. *Both the worker and the farmer are required to sign the Communicable Disease Form*

Approved by: **Director of Research**
The Banana Board

		Procedure	
Quality Management System Title: Product Recall Procedure		Document Number: PRP 1 Revision Date: 0	
Department:	Implementation Date: 01/03/08	Issue #: 1	Sheet 1 of 1
Author:	Ownership:	Approved & Release: By Director of Research	

Product Recall Procedure

1.0 Purpose

To ensure that products which are deemed unsuitable for the market because of physical, chemical or physiological defects are withdrawn or recalled.


2.0 Responsibilities

Director of Research/ Officers/ Growers/ Workers/Functional Managers/ Supervisors

3.0 Procedure

- 3.1 As soon as product is found to be unsuitable for the market, it is reported to the ***Director of Research/ Officers/Grower/Functional Managers/ Supervisors.***
 - . *The name of the farm and the boxing number must be reported on the Recall Notice Form.*
- 3.2. *The Officers/Grower/Functional Managers/ Supervisors will inform the Director of Research and the Technical /Procurement Manager of the trading partner. The specifications of the batch/ shipment is reported.*
- 3.3. *The Technical /Procurement Manager will take the necessary action to ensure that fruits are not dispatched to the customers, or are withdrawn from the market.*
- 3.4. *The Technical /Procurement Manager must provide evidence of disposal of the fruits which are recalled by way of the Recall Response Form.*

Approved by: **Director of Research**
The Banana Board

		Procedure	
Quality Management System Manual Title: Procedure for Sub-Contractors of Sigatoka Management		Document Number: PSSM 1	
		Revision Date:	
Department:	Implementation Date: 01/03/08	Issue #: 1	Sheet 1 of 2
Author:	Ownership:	Approved & Released by Director of Research	

Procedures for Subcontractors of Sigatoka Management

Introduction

The management of Sigatoka is critical for efficient banana production. The quality of Sigatoka control is directly related to fruit quality and financial returns to growers.

Effective Sigatoka management truly employs all the principle of Integrated Pest Control (Prevention, Monitoring and Intervention) with due regards to health and protection of the Environment.

In the Banana Industry, some growers have designated workers employed in spraying for Sigatoka, while other farmers sub-contract the services to specialized sprayers. Sub-contracted sprayers for Sigatoka Control must comply with the requirements for GLOBALGap Standards as outlined below:

1.0 Purpose

- 1.2 To instruct operators of private of Sigatoka Management service of the GLOBALGAP procedures.


2.0 Scope

- 2.1 This procedure applies to all privately sub-contracted Sigatoka operators on banana farmers that are certified by GLOBALGAP.

3.0 Responsibilities

- 3.1 It is the responsibility of the **Growers or its agent the Research Department** to set up a monitoring programme for effectiveness the sub-contractors' service in controlling the disease; use of regulation pesticide and procedures and providing the operators with a copy of the Quality Manual.
- 3.2 **The Growers** are responsible for hiring the regulated operator, supervising the spray operation, providing the chemicals and paying for the service.
- 3.3 **The Sub-contractors** are responsible to follow the listed procedures.

Approved by: **Director of Research**

		Procedure	
Quality Management System Manual Title: Procedure for Sub-Contractors of Sigatoka Management		Document Number: PSSM 1	
		Revision Date:	
Department:	Implementation Date: 01/03/08	Issue #: 1	Sheet 2 of 2
Author:	Ownership:	Approved & Released by Director of Research	

Procedures for Subcontractors of Sigatoka Management

4.0 Procedures

- 4.1 *Maintenance of equipment and suggesting minimization ideas.*
- 4.2 *Must be trained in the areas of*
 - 4.2.1 *Principles of Sigatoka Management.*
 - 4.2.2 *Safe use and Handling of Pesticide.*
 - 4.2.3 *Mist blower Care and Maintenance*
 - 4.2.4 *Prudent use and Handling of Pesticide.*
- 4.3 *Protective Gears must be washed in a special container on the farm, and water used in the cleaning of protective gears must be disposed of in the charcoal pit.*
- 4.4 *Protective Gears must be stored in clean areas free from contaminations.*
- 4.5 *Where applicable volume rate, application rate, time started spraying and end period must be made available to farmers.*
- 4.6 *Only chemicals approved by the Industry and the E.U. must be applied on farms.*
- 4.7 *Sub contractors must comply with all signs and safety instruction posted on farms.*

Approved by: **Director of Research**
The Banana Board

		Procedure	
Quality Management System Manual Title: Procedures for Waste Management		Document Number: PWM 1 Revision Date: 06/12/08	
Department:	Implementation Date: 01/03/08	Issue #: 2	Sheet 1 of 2
Author:	Ownership:	Approved & Released by Director of Research	

Procedures for Waste Management

Introduction

The Banana Board is committed to ensuring that the growers produce bananas in an environment that is friendly and sustainable. Due regards must also be paid to consumer protection as well as worker health and safety.

The Banana Board is a signatory to the Memorandum of Understanding with Jamaica Producers Group (JPG) and chemical suppliers. This is to facilitate the proper handling and disposal of chemicals and containers as approved by Local and International Regulations. The major externalities of the farm operations are:

- 1. Used sleeves*
- 2. Empty chemical containers*
- 3. Waste from human activity*

Used Sleeves:

Sleeves are polyethylene bags used for fruit protection against physical and chemical damages. Used sleeves must be collected at the end of each harvesting operation and stored in a secured manner so that they do not impact the environment and wild life.

Disposal of Waste from Human Activity

Waste generated from farm operation may include; bits of packaging material, food and food packages. Waste materials must be handled in a manner to prevent the breeding of rodents and other pests.

Empty Chemical Containers

Empty chemical containers are potential hazard and therefore all handling procedures are well outlined in the Quality Management System manual.

1.0 Purpose

To instruct all growers and workers of procedures to dispose of solid waste.

2.0 Scope

- 2.1 Applies to all processes in the production, harvesting and processing of banana cultivation.*

Approved by: **Director of Research**
The Banana Board



Procedure

Quality Management System Manual Title: Procedures for Waste Management		Document Number: PWM 1 Revision Date: 06/12/08	
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3.0 Responsibilities

3.1 It is the responsibility of the **Growers or and all persons** who work or visit banana farms to comply with the procedures.

4.0 Procedures

- 4.1 Growers must ensure that used sleeves are collected, stored in a secure manner and then transported to St Mary Banana Estate (SMB).
- 4.2 The management of SMB will receive sleeves from growers on a pre-arranged basis and the relevant receipts issued. Sleeves are then sorted compacted and returned to the manufacturer for recycling.
- 4.3 The return and recycling arrangement is further detailed in the MOU (JPG/ THE BANANA BOARD/ Chemical Suppliers).
- 4.4 The Banana Trading Company (BTC) currently operates two collection points for containers, one in St Mary and the other in Port Antonio. Farmers can deliver empty clean containers at anytime in Port Antonio and at pre arranged times in St Mary.
- 4.5 The farmers must have a designated and labeled bin for the purpose of storing garbage.
- 4.6 This bin/container must be one that was used for the purpose of storing food material or any other non chemical source.
- 4.7 Arrangement should be made by the grower with the National Solid waste authority for collection and disposal of garbage.


Approved by: **Director of Research**
The Banana Board

			
Quality Management System		Document Number: HRA 1	
Title: Hygiene Risk Analysis		Revision Date: 0	
Department:	Implementation Date: 01/03/08	Issue #: 1	Sheet 1 of 1
Author:	Ownership:	Approved & Release: By Director of Research	

Hygiene Risk Analysis: Banana Crop

Operation	Hygiene Risk	Control Measures	Critical Factors
Harvesting	Contamination from harvest personnel, harvest tools or harvesting into contaminated containers Harvesting contaminated produce	Hygiene training/ awareness, hand wash facilities, not working when ill. Cleaning of facility. Checking cleanliness of crates before harvest/ packing	Ensure good staff awareness. Ensure appropriate facilities at pack houses. Keep harvesting containers clean
Transport from field	Dirt/ bacteria from hands, trays, vehicles used in transport	Clean trays before each use; wash hands after toilet; awareness of harvesters; cover the produce while transporting	Minimal time between harvest and arriving at the farm
Grading/ Handling	Human, tools, packaging, dirty facilities, Environmental considerations, pest control, domestic animals etc.	Staff awareness, training, toilet and washing facilities, effective rodent and insect control, cleaning regularly. Keep out domestic animals.	Ensure awareness of hygiene procedures; keep domestic animals out of facility. Keep surroundings clean.
Post harvest treatments	Contamination from dirty water, dirty containers, overuse of chemicals etc.	Worker training, awareness, cleaning of crates, use potable water, approved rates of post-harvest chemicals.	Moist conditions pose extra risk from microbes
Storage	Contamination from the surroundings.	Load as soon as possible, keep surrounding clean, cleaning schedules	Staff awareness important Check for cleaning
Transportation to Customer	Contamination from pick-up trucks	Ensure vehicles are clean before loading. Cover the produce	Ensure use of appropriate vehicles

Approved by: **Director of Research
Banana Board**

			
Quality Management System I Title: Health and Safety Risk Assessment		Document Number: HSR 1 Revision Date: 0	
Department:	Implementation Date: 01/03/07	Issue #: 1	Sheet 1 of 3
Author:	Ownership:	Approved & Release: By Director of Research	

Health and Safety Risk Assessment: Banana Crop Production

Hazardous substances for farmers and workers (pesticides, fertilizers, oils)

<i>Substances</i>	<i>Safety Hazard for Workers</i>	<i>Reasonably Likely to Occur?</i>	<i>Basis for Decision Column 3</i>	<i>Measures to Prevent or Minimize Risk</i>
Fertilizer	Chemical	Yes	Some fertilizers can be irritable to the skin and eye, also the dust particles of some products can be irritable to the throat, and respiratory tract	Training of workers, use of adequate PPE during application
Nematicide	Chemical	Yes	<i>Oxamyl</i> : WHO class Ib, highly toxic via oral route, slightly toxic by dermal absorption <i>Ethoprophos</i> : WHO class II, moderately hazardous, toxic in contact with skin, harmful if swallowed. <i>Fenamiphos</i> : WHO class 1b, highly hazardous <i>Sincocin</i> : No WHO classification	Certificate of attendance to approved agrochemical application training course by applicator, Use of adequate PPE, Application of permitted chemicals only Observing re-entry times in field
Herbicide	Chemical	Yes	Possible spillage or leaking of application equipment <i>Glyphosate</i> : WHO: acute toxicity very low. Eye and skin irritation possible	Certificate of attendance to approved agrochemical application training course by applicator, Use of adequate PPE, Application of permitted chemicals only Observing re-entry times in field


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The Banana Board**



Quality Management System Title: Health and Safety Risk Assessment		Document Number: HSR 1 Revision Date: 0	
Department:	Implementation Date: 30/03/07	Issue #: 1	Sheet 2 of 3
Author:	Ownership:	Approved & Release: By Director of Research	

Substances	Safety hazard for workers	Reasonably likely to occur?	Basis for decision column 3	Measures to prevent or minimize risk
Fungicide used in aerial spraying	Chemical	Yes	<p><i>Azoxystrobin</i>: WHO: acute toxicity very low</p> <p><i>Propiconazole</i>: WHO class II</p> <p><i>Copper Sulphate pentahydrate</i>: WHO class IV</p> <p><i>Thiophanate methyl</i>: WHO class III</p> <p><i>Fenpropimorph</i>: WHO class III</p> <p><i>Pyrimethanil</i>: WHO class IV</p> <p><i>Spiroxamine</i>: WHO class II</p> <p><i>Paraffinic Oil</i>: very low acute toxicity can be handled with only the basic protection of the skin and eyes</p>	Announcement of spraying cycles in cutting notices; Observing of re-entry times in field
Fungicide used in ground spraying	Chemical	Yes	<p><i>Azoxystrobin</i>: WHO: acute toxicity very low</p> <p><i>Propiconazole</i>: WHO class II</p> <p><i>Copper Sulphate pentahydrate</i>: WHO class IV</p> <p><i>Thiophanate methyl</i>: WHO class III</p> <p><i>Fenpropimorph</i>: WHO class III</p> <p><i>Pyrimethanil</i>: WHO class IV</p> <p><i>Spiroxamine</i>: WHO class II</p> <p><i>Paraffinic Oil</i>: very low acute toxicity can be handled with only the basic protection of the skin and eyes</p>	Certificate of attendance to approved agrochemical application training course by applicator, Use of adequate PPE, Application of permitted chemicals only Observing of re-entry times

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The Banana Board

			
Quality Management System Title: Health and Safety Risk Assessment		Document Number: HSR 1 Revision Date: 0	
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Substances	Safety hazard for workers	Reasonably likely to occur?	Basis for decision column 3	Measures to prevent or minimize risk
Insecticide	Chemical	Yes	<i>Primiphos-methyl</i> : WHO class III <i>Abamectin</i> : no WHO classification <i>Chlorpyrifos</i> : WHO class II, moderately hazardous <i>Thiamethoxan</i> : No WHO classification <i>Bifenthrin</i> : WHO class II, moderately hazardous	Certificate of attendance to approved agrochemical application training course by applicator, Use of adequate PPE, Application of permitted chemicals only
Other Pesticides	Chemical	Yes	<i>Metaldehyde</i> : no WHO Classification <i>Difenacoum</i> - WHO class 1a, extremely hazardous <i>Bromadiolone</i> - WHO class 1a, extremely hazardous	Certificate of attendance to approved agrochemical application training course by applicator, Use of adequate PPE, Application of permitted chemicals only
Post Harvest Fungicide Application	Chemical	Yes	<i>Imazilil</i> : WHO class II, moderately toxic by ingestion <i>Aluminium Sulphate</i> : no WHO classification	Certificate of attendance to approved agrochemical application training course by applicator, Use of adequate PPE, Application of permitted chemicals only

Approved by: **Director of Research**
The Banana Board




Quality Management System Manual Title: Irrigation Water Pollution Risk Analysis		Document Number: IWPRA 1 Revision Date:	
Department:	Implementation Date: 01/03/08	Issue #: 1	Sheet 1 of 1
Author: J. Conie	Ownership:	Approved & Released by Director of Research	

Irrigation Water Pollution Risk Analysis

Operation	Source of Water	Possible Contamination	Risk Level	Critical Factors	Measures to Minimize Risk
Irrigation	Pipe (National Water Commission)	Microbial	Low	Possible contamination from problems in processing, pipe breaks and seepages	Water quality testing conducted biannually. Policy to use drip irrigation only for efficiency, ensures that irrigation water does not contact fruits in the field
		Chemical	Low		
		Physical	Low		
	Spring/River	Microbial	Moderate	Possible contamination from surrounding domestic and livestock activities	Water quality testing Conducted biannually. Policy to use drip irrigation only for efficiency, ensures that irrigation water does not contact fruits in the field
		Chemical	Low	Possible contamination from surrounding domestic activities and improper use of fertilizer and pesticides	
		Physical	Low	Possible contamination from surrounding domestic, livestock and agricultural activities	
	Well	Microbial	Moderate	Possible contamination from leaking septic storage and livestock activities	Water quality testing Conducted biannually. Policy to use drip irrigation only for efficiency, ensures that irrigation water does not contact fruits in the field
		Chemical	Low	Possible contamination from leaking septic storage, livestock activities and improper use of fertilizer and pesticides	
		Physical	Low	Possible contamination from leaking septic storage, surrounding livestock activities and improper use of fertilizer and pesticides	

Approved by: **Director of Research**
The Banana Board

			
Title: Wild Life Conservation Plan		Document Number: WHLCP2 Revision Date: 06/12/2007	
Department:	Implementation Date:	Issue #: 1	Sheet 1 of 6
Author:	Ownership:	Approved & Release: By Director of Research	

Wildlife and Landscape Conservation and Enhancement: An Integrated Management Plan

As stated in its Quality Management System (QMS2) The Banana Board (THE BANANA BOARD) has employed appropriate technology, competent human resources, efficient cultural practices and positive staff welfare approaches, and committed itself to a rigorous and meticulous programme of quality and environmental management in its monitoring of farm production operations. The programme is an integrated one and involves:

- Land rehabilitation through establishment of trees;
- Protection of streams and water resources through responsible use and disposal of chemicals;
- Erosion control through effective agronomic practices;
- Recycling of harmful wastes and organic residues and disposal of solid wastes;
- Protection and enhancement of biological diversity.

The following Statement of Integrated Actions seeks to highlight the manner in which wildlife and landscape considerations are fully integrated and linked with the on-farm management operations. The Actions are organized in eight subject areas, namely: wildlife conservation and habitats; natural and historical features; land use and landscape; irrigation; recycling of residues and solid waste disposal; dust mitigation; community relations; and disaster preparedness.

Statement of Integrated Actions


1. Wildlife Conservation and Habitats

THE BANANA BOARD is well aware of the importance of the country's natural resources and as a responsible corporate entity the Company is committed to supporting national policies and programmes aimed at the sustainable conservation and management of such resources. As indicated in the National Biodiversity Strategy, Jamaica has approximately 715 terrestrial endemic species, of which 221 have been listed as "critically imperilled" and "especially vulnerable to extinction", and wildlife conservation merits both public and corporate attention. The Company promotes the survey and assessment of the ecological potential of properties and wildlife habitats and will foster the development and enhancement of wildlife heritage as part of a five-year comprehensive programme. As a first step, THE BANANA BOARD will seek to bring the banana farms under the protection of existing legislation.

- 1.1** *Offer the farms to be declared as bird and wildlife sanctuaries under the Wildlife Protection Act.*

Verifiable indicator: Jamaica Gazette Notice

Approved by: **Director of Research**
The Banana Board

			
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1.2 *Conduct an ecological survey of farms to document and assess the condition of existing wildlife and habitats.*

Verifiable indicator: Inventory of flora and fauna

2. Natural and Historical Features

Some of THE BANANA BOARD's suppliers of banana are significant to Jamaica's history and cultural past. Remnants and relics of sugar factories still exist, as well as aqueducts, marl pits/kilns and other structures. THE BANANA BOARD promotes the survey and inventory all natural and historic features on the farms of its suppliers and enhance their preservation as part of the country's patrimony.

2.1 *Undertake an inventory and assessment of historic sites, archaeological features and artefacts and prepare plans for their development and cultural use.*

Verifiable indicator: Preparation of an interpretive map and development of facilities for visitors and students


3. Land Use and Landscape

The farms of THE BANANA BOARD's banana suppliers maintain optimum banana production by utilizing advanced land management practices on the most arable sites, while protecting other sites from encroachment and abuse. The company promotes appropriate uses for marginal, riparian, wooded slopes and wetlands in keeping with existing national policies for conservation and management of biodiversity, forestry and watersheds. For example, key aspects of the national biodiversity strategy include conservation and sustainable use of biological resources, facilitation of access to biological resources and promotion of public awareness and education, while the goals of the national forestry plan aim at conservation and protection of the natural forests and their biodiversity, management of forested watersheds, promotion of private timber production to reduce pressure on natural forest ecosystems and sequestration of Carbon dioxide from the atmosphere.

3.1 *Continue actions to maintain and conserve levees and buffer strips along river banks, fordings, drains and areas contiguous to banana cultivations [Relates to LP3 & 4, PCM4 of Objectives & Target Action Plan]*

Verifiable indicator: Seasonal inspections

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3.2 *Manage fallow and unused sites to reduce threat to biodiversity from seed of unwanted weed species*

Verifiable indicator: Inspection of ploughed fallow areas after seeding and green cover growth with nitrogen-fixing legumes

3.3 *Offer to declare woodland sections of property as protected areas under the national Forest Act*

Verifiable indicator: Jamaica Gazette Notice

3.4 *Establish plantation forests on selected non-banana production sites on a phased basis starting with pilot demonstration plots*

Verifiable indicator: Annual plantings of timber species in collaboration with private forest plantation initiatives

3.5 *Encourage shrub plantings along property boundaries and consider inclusion of flowering trees that provide shade and enhance the landscape. [Relates to G PRO 1 of Objectives and Target Action Plan]*

Verifiable indicator: Decision taken on an improved landscaping plan

4. Irrigation

Adequate irrigation is essential to efficient farm production, some farms extract water from the rivers. However, as rivers are also used for domestic purposes by residents of adjacent communities and therefore the company promotes the replacement of this source by the use of wells (where possible) and municipal water supply in order to minimize the risk of applying uncontrolled water-pollutants.


4.1 *Explore and utilize underground water resource and phase out use of surface water in farm system where possible.*

Verifiable indicator: Wells in use by registered farmers.

5. Recycling of Residues and Solid Waste Disposal

THE BANANA BOARD recommends the farms practice the recycling of organic residues in the form of stems and navels from processing banana processing, while solid wastes are dumped in a managed landfill. The company promotes composting of organic residues for rapid return to the soil, and will investigate possible uses for sump oil.

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The Banana Board

			
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5.1 *Conduct trials to convert organic residues from banana stems and fruit for recycling as organic fertilizer in compost form. [Relates to A 1& 2, GP 1 of Objectives and Target Action Plan]*

Verifiable indicator: Results of composting trials

6. Dust Mitigation

Dust is an environmental nuisance and health hazard and could contaminate fruit and adversely affect wildlife habitats. THE BANANA BOARD has recommended the action to reduce this nuisance and will facilitate the process of resurfacing roadways under the European Union Banana Support Programme. In addition, sprinkling with sump oil will be tested as a possible sealant for dusty roads.

6.1 *Monitor reduced levels of dust from property access roads; test the possibility of sprinkling with sump oil instead of water. [Relates to OP 7 of Objectives & Target Action Plan]*

Verifiable indicator: Report on sump oil test by 2009

7. Community Relations

THE BANANA BOARD recognizes that the supply farms are an integral part of the rural communities in which they are located. In that regard, the Company acknowledges the work force from among the local residents who benefit from employment and other facilities, thus forming the basis for mutually beneficial relationship. THE BANANA BOARD intends to enhance this relationship by its facilitation outreach and community projects by the National Fair Trade Associations in the near future.


7.1 *Maintain support for environmental protection, local community-based organizations and NGOs committed to watershed management and forest conservation in surrounding locations of the estate*

Verifiable indicator: Reports/newsletters on activities undertaken with FTA, CBOs and NGOs

7.2 *Continue in-house training and participation on national boards engaged in environmental management/monitoring/education [Relates to OP 27 of Objectives and Target Action Plan]*

Verifiable indicator: Reports/newsletters on activities undertaken

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The Banana Board

			
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Author:	Ownership:	Approved & Release: By Director of Research	

8. Disaster Preparedness

The Company has established and recommends intensive procedures and facilities to protect farmers, workers and the environment from work-related hazards as well as the occurrence of natural disasters. To ensure that those provisions are properly integrated and maintained, THE BANANA BOARD intends to undertake continual monitoring and evaluation of measures instituted.


8.1 *Interact with the Banana Industry Insurance and Catastrophe Funds and conduct out periodic monitoring and safeguards to protect against potential threats like fire, flooding and other disasters* [Relates to EP 1 of Objectives & Target Action Plan]

Verifiable indicator: Reports and minutes of meetings.

8.2 *Review and report on all chemical tests and fertilizer analyses annually* [Relates to PCM 2, PCM 3, PCM 4, PCM 10, PR 2 & 6, PR 8, OP 4, OP 5, OP 11, OP 14, OP 15, OP 26 of Objectives & Target Action Plan]

Verifiable indicator: All test results seen by the Special Projects Manager

Approved by: **Director of Research**

			
Title: Wild Life Conservation Plan		Document Number: : WHLCP2	
		Revision Date: 06/12/2007	
Department:	Implementation Date:	Issue #: 1	Sheet 6 of 6
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SUMMARY

ACTION	Verifiable Indicator	Timeframe
<u>1. Wildlife Conservation and Habitats</u>		
1.1 Declare farms as wildlife sanctuaries	Jamaica Gazette Notice	18 months
1.1 Conduct ecological survey	Flora/Fauna Inventory	24 months
<u>2. Natural and Historical Features</u>		
2.1 Undertake inventory of special interest sites	Interpretive map & facilities	18 months
<u>3. Land Use and Landscape</u>		
3.1 Facilitate maintenance of fordings, levees and buffer strips	Seasonal inspections	pre-rains
3.2 Promote fallow and unused sites to restrict weed species	Inspection of fallow areas	annually
3.3 Declare woodlands as protected forest areas	Jamaica Gazette Notice	24 months
3.4 Establish plantation forests on non—banana sites	Annual timber plantings	5 year plan
3.5 Review shrub plantings to consider inclusion of flowering & shade trees	Decision on revised landscape plan	12 month
<u>4. Irrigation</u>		
4.1 Utilize municipal and underground water resource in place of surface water where possible	Wells in use by 2006.	5 year plan
<u>5. Recycling of Residues and Solid Waste Disposal</u>		
5.1 Conduct trials to convert organic residues and recycle as compost	Results of composting trials	18 months
<u>6. Dust Mitigation</u>		
6.1 Promote reduced road dust procedures and test sprinkling with waste sump oil or water	Results of sump oil tests	by 2010
<u>7. Community Relations</u>		
7.1 Maintain support for local FTA, CBOs and NGOs committed to watershed and forest conservation	Reports & newsletters re activities	annually
7.2 Continue in-house training and participation on national environmental boards	Minutes, reports & newsletter re activities	annually
<u>8. Disaster Preparedness</u>		
8.1 Promote periodic programmes to safeguard against threats	Minutes, reports on observations	semi-annually
8.2 Review all chemical tests and analyses annually	Results seen by Director of Research	annually

Approved by: **Director of Research**
The Banana Board

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