



**BANANA SUPPLY CHAIN TRACEABILITY
EAN•UCC Standards Application Guideline**



BANANA SUPPLY CHAIN TRACEABILITY WORKING GROUP



ACKNOWLEDGEMENTS

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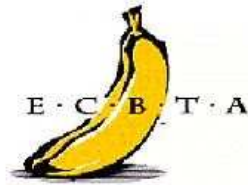
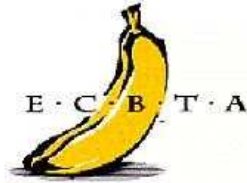


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INTRODUCTION

GS1, Freshfel Europe and European Community Banana Trade Association (ECBTA) co-established the Banana Supply Chain Traceability Working Group in April 2004 with the objective to adapt the “Fresh Produce Traceability Guidelines” in view of its immediate implementation by banana suppliers to the European Union for compliance with the traceability-related provisions of the General Food Law - Council Regulation (EC) No. 178/2002.

Although work has been done primarily with the involvement of banana suppliers to the European Union the focus has been on building a traceability model that has global applicability. The Banana Supply Chain Traceability Working Group was composed of representatives of Bonita, Chiquita, Del Monte, Dole Europe and Fyffes. The present document does not replace the “Fresh Produce Traceability Guidelines”, which remains the reference document for traceability of fresh produce worldwide.

Effective traceability from the grower to the retailer is based upon the accuracy of the information about the products contained in records held by the various supply chain partners. This document provides recommendations and guidance needed to understand and implement the EAN•UCC System of numbering and bar coding from the banana packing station to the retailer. The use of EAN•UCC standards is subject to the “General EAN•UCC Specifications” and membership of GS1 (www.gs1.org).

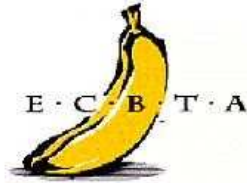
EAN•UCC STANDARDS

In this document, the Banana Supply Chain Traceability Working Group describes the EAN•UCC System for the unique identification of standard trade item groupings not crossing the point of sale, logistic units and trading partners, as well as the data standards, bar code labelling and electronic data exchange as best practices for traceability.

The key reason for this is that GS1 provides single, global, generic, voluntary standards suitable for use by all trading partners to facilitate the identification of companies and their products and to exchange information about them. These standards provide a common language of business used in retail trade and beyond.

If properly used by each member of an extended supply chain, products and data, including information required to manage traceability and shelf life, can be exchanged through each link in the chain - facilitating the seamless flow of information with the flow of goods.

GS1 is the global not for profit organisation that creates, develops and manages the EAN•UCC System of standards. These are open, global, multi-sector information standards, based on best business practices. GS1 has 103 Member Organisations that support the needs of more than 1 million member companies.



BANANA SUPPLY CHAIN TRACEABILITY MODEL

The banana supply chain has always been complex and geographically fragmented, and with more distant suppliers and ever-more demanding customers, the unique characteristics of this supply chain bring challenges to implementing an effective traceability system. The largest companies account for a significant percentage of the industry and have significant product identification and bar coding technology requirements. In contrast, the upstream part of the supply chain is comprised of small and medium sized companies with limited exposure to such technology.

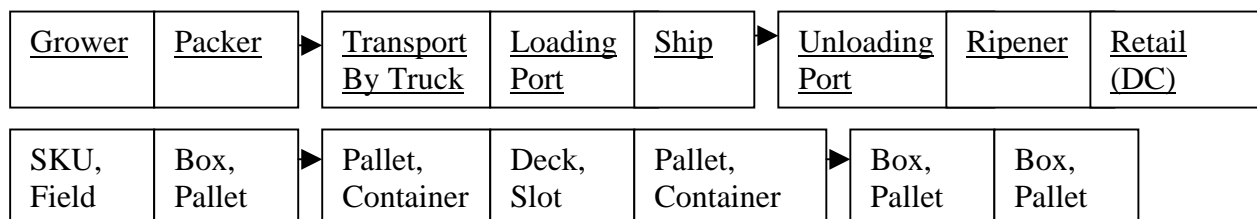
There are also many other companies that provide crop protection products, packaging materials, transportation, storage and other services that are also impacted by traceability. These companies vary greatly in their technical capabilities: from paper, phone and fax based transactions, through robust bar code, EDI¹ and other internal systems. Their ability to perform product tracking and tracing in an accurate and timely manner is directly related to their managerial and technical capabilities.

The Work Group determined that the banana supply chain could be broken into the following key processes:

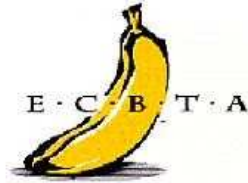
1. Growing
2. Packing
3. Transporting and Receiving
4. Loading at port
5. Unloading at port
6. Ripening
7. Distribution

The physical flow of goods in the banana supply chain is represented below.

Main actors and traceability elements:



¹ Electronic Data Interchange



The Work Group identified the involved parties and their scope, described the business processes, and the trade item and logistics unit identification and bar code labelling requirements. Each process was examined with a view to explain tracking and tracing within it, and to determine the relevant EAN•UCC standards to be deployed.

KEY AREA 1: GROWER

Scope

The grower is responsible for the production, harvesting and despatch, as well as record keeping of appropriate information about the field and products sent to the packing station. Field management records are available on request.

Description

Each field and product grown is uniquely identified. The grower keeps corresponding field management records. The bananas may be sent over a cableway to the packing station.

Traceability Data

- Field management records
- Date of harvest
- Product description
- Field identification
- Receiving packing station identification

EAN•UCC Standards

Due to the internal nature of the growing process, and closed supply chain operated between the grower and packer (each grower supplies only one packer), no EAN•UCC standards apply at this stage. However, the Global Location Number (GLN) is available for the identification of fields and receiving packing stations. The Global Trade Item Number (GTIN) is available for the coding of the product description.

Tracking Process

From date of harvest and field identification code to the packing station identification code.

Tracing Process

From the field management record to the treatments and products applied.

KEY AREA 2: PACKER

Scope

The packer receives the bananas from the grower or another packer, packs them into boxes, and may palletise them. He then despatches them to a third party (e.g. service provider) or the loading port. The packer is responsible for keeping records of the origin of the products packed, labelling their identification and how and where they were dispatched.

Description

Each packing station is uniquely identified within the company to which it belongs. The packer receives the bananas from a field bearing an identification code assigned by the grower or another packer. The product is packed into boxes, which are identified with a packing station identification code and packing date. The boxes may be palletised and shipped to the port or a third party. The packer is responsible for keeping appropriate information about the packing process. Banana production packing records must be available on request.

Traceability Data

- SKU²/GTIN
- Pack station identification (GLN)
- Pack date (YYMMDD)
- Time of day (AM/PM)
- Packing line staff name
- Country of origin

EAN•UCC Standards

Standard groupings of trade items not crossing the point of sale (boxes) are identified with an UCC/EAN-128 bar code, which contains the following Application Identifiers:

- 01 – Global Trade Item Number (GTIN)
- 10 – Batch/Lot code

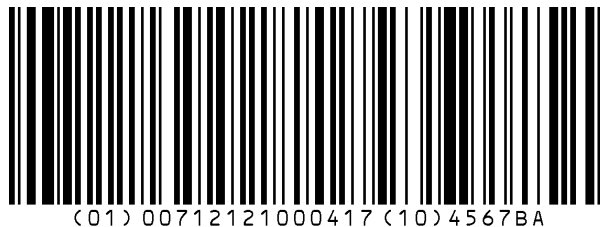


Figure 1 – Example of an UCC/EAN-128 bar code

² Stock Keeping Unit

Logistic units (pallets) are identified with an UCC/EAN-128 bar code, which contains the following Application Identifiers:

Mandatory:

00 – Serial Shipping Container Code (SSCC)

Optional:

02 – GTIN of the items contained
37 – Count of the items contained
13 – Packaging date
10 – Batch/Lot code

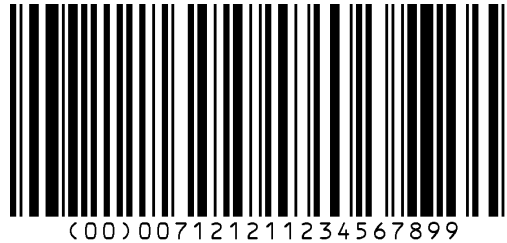


Figure 2 – Example of an SSCC bar coded in UCC/EAN-128

The packer allocates the GTIN and SSCC, which are obtained by joining a GS1 Member Organisation. Please see document annex for contact details of GS1 Member Organisations in the banana exporting countries and territories.

Current industry practice of assigning Batch/Lot codes:

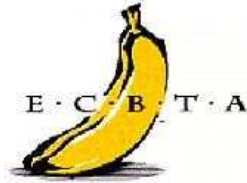
The Application Identifier 10 indicates that the data field contains a batch or lot code. It gives whatever information the party with responsibility for traceability of the trade item to which the Application Identifier 10 is applied considers relevant. The batch or lot code is alphanumeric. The current industry practice is to construct the batch or lot code using the pack house code, week and day code of packing. As it is an attribute of a particular item it cannot be processed on its own, but together with the GTIN of the trade item to which it relates.

Tracking Process

From Pack station identification (GLN) and Packing date to the transport and storage unit SSCC and the Loading port (GLN).

Tracing Process

From the transport and storage unit (SSCC) to Pack station identification (GLN) and Packing date to and Date of harvest to the Field(s) identification (GLN) and Field management records.



KEY AREA 3: TRANSPORT AND RECEIVING

Scope

The transporter receives the bananas from the packer. This may be loose boxes or pallets (boxes that were palletized). He transports the boxes or pallets from the packer to the port or other 3rd party service provider.

Description

The SSCC of each logistics unit (pallet) is scanned and recorded against the details of the vehicle (e.g. licence plate #, the transport company details) and the “load from” details (e.g. packer, load dock #, person responsible, date & time of load, etc) and the “load to” details (e.g. receiver name & address, date & time of receive, etc). If the pallets are loaded into a container, the container details are also recorded (e.g. container #, seal #).

In the case of the loose cartons, all the above details are recorded against the packer and product specification of the boxes transported (excluding the SSCC).

Traceability Data

The loading date file contains the SSCC of each loaded and received pallet and/or container. The packer, receiver and/or 3rd party service provider keeps record of all SSCC numbers and containers loaded and received for transportation to another packer or 3rd party service provider or port. The transport company keeps record of all SSCC numbers transported, including the loading and off-loading details. These records must be made available on request.

EAN•UCC Standards

Standard groupings of trade items not crossing the point of sale (boxes) are identified with an UCC/EAN-128 bar code, which contains the following Application Identifiers:

- 01 – Global Trade Item Number (GTIN)
- 10 – Batch/Lot code

Logistic units (pallets) are identified with a Logistics Label, which contains the following Application Identifiers in the UCC/EAN-128 bar code:

Mandatory:

- 00 – Serial Shipping Container Code (SSCC)

Optional:

- 02 – GTIN of the items contained
- 37 – Count of the items contained
- 13 – Packaging date
- 10 – Batch/Lot code


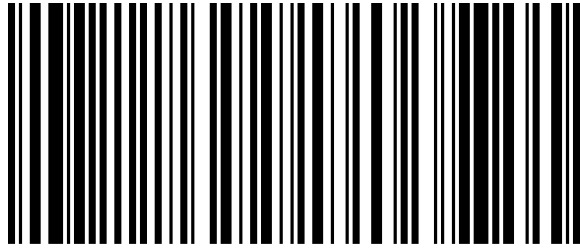
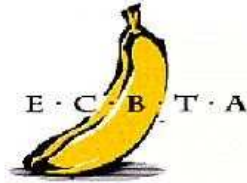
EAN.UCC LOGISTICS LABEL	
From: Banana Company Fresh Produce Street B-1000 Brussels Belgium	To: Fruit World Retailer 110 Healthy Living Road Boston, MA 02130 USA
<u>SSCC:</u> 007121211234567899	
<u>COUNT:</u> 20	<u>BATCH/LOT CODE:</u> 4567BA
<u>PACKAGING DATE:</u> 01 JAN 04	
 (02) 007121211234567899 (13) 050101 (37) 20 (10) 4567BA	
 (00) 007121211234567899	

Figure 3 – Example of an EAN.UCC Logistics Label



The packer allocates the GTIN and SSCC, which are obtained by joining a GS1 Member Organisation. Please see document annex for contact details of GS1 Member Organisations in the banana exporting countries and territories.

Tracking Process

From Pack station identification (GLN) and Packing date to the transport unit SSCC and the Loading port (GLN) or 3rd party service provider.

Tracing Process

From the transport (SSCC) to Pack station identification (GLN) and Packing date to Date of harvest to the Field(s) identification (GLN) and Field management records. From the SSCC number of the pallet/container loaded and recorded in the loading data file, inclusive of the identification of the vehicle onto which it is loaded for transportation, to the port facility or pack-house or 3rd party service provider.

KEY AREA 4: LOADING PORT

Scope

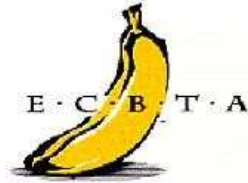
The port facility receives transport storage units, which are sent either to storage, palletising, labelling, quality control and or to the ship. The port facility is responsible for keeping records about the handling process.

Description

The SSCC of each transport and storage unit is scanned and recorded. The SSCC of each pallet and or container loaded on board of a ship is scanned and recorded alongside the identification of the deck onto which it is stored for transport.

Traceability Data

The loading date file contains the SSCC of each loaded pallet and/or container and the identification of the deck or slot onto which it is stored on the ship. The port facility or stevedoring company keeps record of all SSCC numbers loaded on the ship.



EAN•UCC Standards

The packer allocates the SSCC. If the port facility or stevedoring company at the port performs the palletising operation, the packer will make available its SSCC numbers to be bar coded on the pallets. Logistic units (pallets/containers) are identified with an UCC/EAN-128 bar code, which contains the following Application Identifiers:

Mandatory:

00 – Serial Shipping Container Code (SSCC)

Optional:

02 – GTIN of the items contained
37 – Count of the items contained
13 – Packaging date
10 – Batch/Lot code

Tracking Process

From the SSCC number of the pallet/container received from the pack house by the port facility (exporter) to the loading data file, which contains the identification of the deck onto which it is stored on the ship.

Tracing Process

From the SSCC number of the pallet/container loaded on the ship and recorded in the loading data file, inclusive of the identification of the deck onto which it is stored, to the port facility and pack house of origin (exporter).

KEY AREA 5: UNLOADING PORT

Scope

The port facility is responsible for unloading the ship and allotting the pallets and/or containers to storage, road and/or rail transport vehicles.

Description

The stevedores unload the pallets and/or containers from the ship on behalf of the product owner. The pallets and/or containers are loaded onto road and/or rail transport vehicles and shipped to the ripening facilities. The stevedoring company keeps a tally of the SSCC numbers of the pallets unloaded and cross-docked for road and/or rail transport to the ripening facilities. The tally records are available on request.

Traceability Data

The loading data file contains the SSCC of each loaded pallet and the identification of the deck/slot onto which it was stored on the ship. The tally records provide a link between the SSCC numbers of the pallets or containers unloaded and cross-docked for transport.



EAN•UCC Standards

Logistic units (pallets) are identified with an UCC/EAN-128 bar code, which contains the following Application Identifiers:

Mandatory:

00 – Serial Shipping Container Code (SSCC)

Optional:

02 – GTIN of the items contained

37 – Count of the items contained

13 – Packaging date

10 – Batch/Lot code

Tracking Process

From the SSCC contained in the loading data file to the stevedore tally records and transport and storage instructions (GLN).

Tracing Process

From the transport and storage instructions to the pallet SSCC tally records and to the loading data file.

KEY AREA 6: RIPENING

Scope

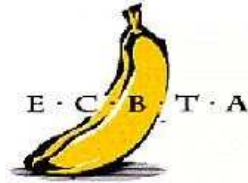
The ripening company is responsible for receiving the pallets, storing them in ripening chambers, repacking, order picking and despatching.

Description

The SSCC of a received pallet is recorded, and it is moved to an intermediary storage location or ripening chamber, which is uniquely identified within the site. The information about the contents of the pallet is recorded.

Traceability Data

The ripening companies records contain the SSCC of the pallet received, identification of the location from which it was sent, and the GLN of the destination to which it was dispatched. If the dispatched pallet was newly created and thus allocated a new SSCC by the ripening company, then the SSCC numbers of all pallets used for its creation are linked to it and recorded, if applicable - alongside the GTIN and Batch/Lot code of each standard trade item grouping contained. The latter can create the need for an enormous effort and can be solved through the application of a “time window”, to be defined by each company, when a product is packed. Newly created pallets during this time window can be linked to pallets used up within the same time frame. The SSCC is recorded and linked to the GLN of its destination.



EAN•UCC Standards

Logistic units (pallets) are identified with an UCC/EAN-128 bar code, which contains the following Application Identifiers:

Mandatory:

00 – Serial Shipping Container Code (SSCC)

Optional:

02 – GTIN of the items contained

37 – Count of the items contained

13 – Packaging date

10 – Batch/Lot code

Tracking Process

From the SSCC of the pallet despatched to the GLN of its destination.

Tracing Process

From the SSCC of the received pallet to the delivery documents, which contain the transport vehicle details, identity of the supplier.

KEY AREA 7: DISTRIBUTION

Scope

The retail distribution centre receives pallets from the ripening company and stores or cross-docks them for despatch to the retail points of sale. The store orders are picked and existing or newly created pallets are delivered to them.

Description

The SSCC of an incoming pallet is recorded and linked to the GLN of the supplier. Each time the pallet is moved within the distribution centre, its SSCC is recorded and linked to the GLN of its new location. The SSCC of an unmodified pallet picked for distribution from the storage area or cross-docked without any storage is recorded and linked to the GLN of its destination. A newly created pallet contains standard trade item groupings originating from different pallets. In this case, a new SSCC is assigned to it and linked to SSCC numbers of all other pallets used in its creation and/or, if applicable, the GTIN and Lot Code of each standard trade item grouping, which was used. This can create the need for an enormous effort and can be solved through the application of a “time window”, to be defined by each company, when a product is packed. Newly created pallets during this time window can be linked to pallets used up within the same time frame. The SSCC is recorded and linked to the GLN of its destination.

Traceability Data

- SSCC of the inbound pallet and GLN of its supplier
- SSCC of the outbound pallet, either unmodified or newly created
- Links between the SSCC of the newly created pallet and the SSCC of the pallets used in its creation and, if applicable the GTIN and Batch/Lot code of each standard trade item grouping (box) shipped to the store
- GLN of the store to which the pallet was despatched

EAN•UCC Standards

Standard groupings of trade items not crossing the point of sale (boxes) are identified with an UCC/EAN-128 bar code, which contains the following Application Identifiers:

- 01 – Global Trade Item Number (GTIN)
- 10 – Batch/Lot Number
- 13 – Packaging Date

Logistic units (pallets) are identified with an UCC/EAN-128 bar code, which contains the following Application Identifiers:

Mandatory:

- 00 – Serial Shipping Container Code (SSCC)

Optional:

- 02 – GTIN of the items contained
- 37 – Count of the items contained
- 13 – Packaging date
- 10 – Batch/Lot code

Tracking Process

The SSCC of the outbound pallet is recorded and linked to the GLN of its destination (point of sale).

Tracing Process

The SSCC of the inbound pallet is recorded and linked to the GLN of the sender (e.g. ripening facility).

BEST PRACTICE FOUNDATION ELEMENTS

Record Keeping

Different countries have different Record Keeping requirements. It is therefore recommended that all records indicating the immediate previous source and next intended recipient of a product, be kept for a minimum period of two (2) years.

A record is defined as any one or a combination of the following:

- Pre-harvest records (any ingredient, supplement or product used in the production of a banana. This should include the detail of each ingredient or supplement, e.g. source and manufacturer of ingredient.)
- Post-harvest records (any ingredient, supplement or product used in the production of a banana, including the packing material (e.g. box / carton)
- Any data file produced as part of transactions during the Supply Chain.

Use Of Agro Chemicals

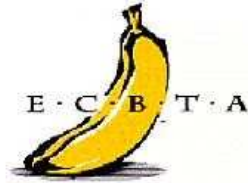
Most of the Export companies have a restricted list of agro chemicals that may be used and which approved by organizations such as the EPA, USDA and EU and have a CODEX registration.

The purposes of the use of Agrochemicals are following:

- Nutritional treatment (Fertilisers)
- Disease treatment (Control)
- Nematode treatment (Control)
- Treatments against insects (Control)
- Post harvest treatment
- Weed treatment. (Control)

Not all products of this list are always used, as this depends on the condition of the plantation and if eventual diseases have to be treated. The authorisation to use them is taking in consideration the environmental aspects. In order to make sure that no other products are used, some Exporters are obliging the producer to buy the agro chemicals through his sources. The application time and the concentration are also clearly dictated as to respect GAP.

Some of these agro chemicals can be of chemical, organic or natural origin. The data record of the use of the chemicals is always kept in registers or data base. If special treatment was needed for a specific disease the disease is subscribed in the treatment record. People that have access to the store of the chemicals are trained for this purpose and are equipped with special protecting clothes.



Data Alignment

Some companies already have effective internal traceability systems in place. The next step is to achieve full supply chain traceability. The main requirements for handling withdrawals³ and recalls⁴ across the supply chain are having reliable data, the possibility to exchange the data and properly mapped business processes. A good internal traceability system is a prerequisite to a chain traceability system. The investments in an internal traceability system will not be wasted in moving towards chain traceability. All good chain traceability software should be able to integrate seamlessly to any internal system. The application of EAN.UCC standards is a prerequisite for the alignment of traceability systems.

Companies that implement collaborative best practices and EAN-UCC standards need to encourage their partners to do the same. Before any EAN-UCC bar code label can be scanned, there has to be an exchange of master data between the trading partners. This data defines the specific trade item, such as its GTIN; the logistic unit, such as its SSCC; and the trading partner details, such as its GLN. Because this information is retrieved from the receiver's files, it is crucial that the receiver is able to maintain the necessary EAN-UCC data standards in its database. As the full product data is built from both the sender and receiver's information, it is vital that the data is aligned. Therefore, data alignment must occur prior to any physical transaction between the sender and receiver.

Bar Code Print Quality

Although technical improvements are being continuously made, printing UCC/EAN-128 bar codes onto corrugated boxes does not provide the optimal scanning quality (in terms of the combination of the quality of the corrugated board and/or the quality of the printing devices). Therefore, UCC/EAN-128 bar codes are currently first printed onto labels, which are then applied on the corrugated box.

Migration to EAN-UCC Standards

In a supply chain where many trading partners are involved it is important to invest in technology that supports properly aligned product identification and traceability processes to ensure that the full potential benefits of the investment can be achieved. Manufacturers and retailers, large and small companies can participate. Achieving proper alignment is the main driver for recommending companies to assess their current position and to consider implementing best practice as described in EAN•UCC standards.

³ A procedure to withdraw products from the market where they have left the immediate control of the brand owner

⁴ A procedure to withdraw products from the market where they have left the immediate control of the brand owner and where they may have reached the consumer

Throughout this process a collaborative approach is recommended including dialogue between all supply chain partners. This dialogue will lead to the identification of all essential supply chain information and material flows to be received, handled and generated within a company's boundaries and at interfaces between the company and its trading partners (e.g. at receiving and despatch of materials and finished goods). The important information that must be properly recorded and exchanged includes:

- Identification of all supply chain partners through unambiguous coding using the Global Location Number (GLN)
- Identification of all unique products using the Global Trade Identification Number (GTIN)
- Identification of logistic units using the Serial Shipping Container Code (SSCC)
- Bar coding of trade items and logistic units with appropriate EAN.UCC bar codes
- Precise and cost efficient electronic data interchange using standard electronic message formats (EANCOM® or EAN.UCC XML)

A clear analysis should be completed to identify and describe the current status of your company organisation, IT systems and business processes ("as is") and an analysis should be prepared to describe the desired future status ("to be"). The analysis of the current practices of the banana sector and their expected future development are to be taken into account in order to assess the timeframe needed to reach a critical mass of players for implementation. This will help identify and document the steps required to implement a migration programme and achieve a successful implementation of standards including:

- Organisational changes
- Investments in technology
- Integration of new technology process designs

The final key step in the migration plan is to find the best sequence in which to implement the solution, starting with organisational change and driving into technological implementation whilst preserving the benefits achieved through each step of the process improvements. All steps developed should be documented including investment, impact and expected improvements and results. An established timeline taking account of legislation, coupled with sound economic analysis is the backbone of the migration plan.

Self Assessment Scorecard

A self-assessment scorecard should be developed to measure the degree of compliance and implementation of best practice. This self-assessment can be presented as a checklist with a score that indicates the degree of implementation achieved.

The following example can be further expanded or reduced depending on each company's objective.

Level 1: Identification and Labelling of Products	Score*
a. Products are identified as appropriate using EAN•UCC bar code standards at each level of product hierarchy and step in the supply chain (e.g. consumer unit, box, pallet).	
b. Logistic units are labelled using EAN•UCC bar code standards in pack houses and warehouses.	
c. Clear information profiles are exchanged upstream and downstream to supply chain partners to ensure end-to-end traceability of products including raw material, ingredients, packaging materials, etc.	
d. Risk Assessments have been completed to identify and minimise risk within production and supply chain processes.	
Level 2: Scanning Capabilities combined with Electronic Information Flow	
a. Bar Code Scanning capabilities are implemented in pack houses and warehouses to ensure accurate data capture and improved material and information handling (e.g. scanning of incoming pallets)	
b. A flow of information, which describes the goods dispatched / received, is exchanged with trading partners (i.e. electronic flow of information supported by the Despatch Advice message).	
c. The flow of information on dispatched / received goods contains all the relevant information for traceability.	
d. The flow of information on despatched / received goods is processed 'just in time' to achieve accurate data integration. This principle also applies to paper based information processing.	
Level 3: Data Recording	
a. All stock movements are recorded electronically and in an internal centralised database in such a way that the information can be accessed easily and rapidly by all the people who need it to help manage an incident / crisis. Paper based solutions must comply with the same conditions as described for electronic data recording.	

* *The scores could be based on the following suggestion:*

0 = No action taken

1 = Plans have been established but the work has not started

2 = Implementation has started with a limited scope (e.g. some product categories)

3 = Rollout of the full implementation has started

4 = Plans fully implemented

Electronic Despatch Advice

The Despatch Advice is an EDI message specifying details for the goods despatched with the function of advising the receiver (consignee) of the detailed contents of a consignment. The message relates to a single despatch point and a single or multiple destination points and it may cover a number of different items, packages or orders. The message allows the receiver to know what materials were despatched and when, allowing him to prepare the reception of the goods and to crosscheck the delivery with the order. It also allows companies the means to extract and store traceability data, ensuring accurate record keeping of relevant information. The data elements in the following table are the minimum information that needs to be shared between the different parties (one step forward, one step backward) to ensure product traceability.

Uniform Pallet	Mixed Pallet
Unique identification of Despatch Advice Message	Unique identification of Despatch Advice Message
GLN of the "ship from"	GLN of the "ship from"
GLN of the "ship to"	GLN of the "ship to"
Date of shipment	Date of shipment
SSCC of the container/pallet	SSCC of the container/pallet
Identification of the product on the container/pallet: - GTIN of the pallet or GTIN of the Traded Unit packed on the pallet	For each Traded Unit on the container/pallet - GTIN of the Traded Unit - Batch/Lot code - Quantity
Batch/Lot Code	
Quantity (linked to the GTIN of the Traded Unit packed on the pallet)	

Lot/Batch Definition

For the purposes of the Council Directive 89/396/EEC (Article 1) a 'lot' is defined as a batch of sales units of a foodstuff produced, manufactured or packaged under practically the same conditions. In this document, lot and batch are considered to have the same meaning. Lot/batch composition is a critical point in the traceability process. It determines the accuracy of any traceability system.

The more homogeneous the lots/batches are, the more accurate the traceability system. Generally, being able to trace to the detail (product or a small batch level) will increase the costs in the traceability system. Deciding on large heterogeneous batches will probably make the system less costly, but will increase the risks because if a defect arises, more products will be involved than would have otherwise been necessary. Based on the cost/benefit analysis the ideal balance should be sought between present and future costs. This analysis should then be taken into account in the design of the traceability system.

It is difficult to recommend a suitable traceability model for banana producers and retailers by looking at the most cost efficient process and the reliability of the links throughout the supply chain. Situations vary from case to case. In case of a recall, a retailer may not necessarily take the smallest possible batch/lot off the shelves. Retailers will often withdraw all similar products, whether they belong to the affected batch/lot or not. This is more efficient for the retailer, as mistakes can be avoided in-store and consumers are provided with the reassurance that everything is under control.

Stock Withdrawal and Product Recall

Withdrawing or recalling a product is an organisational procedure that relies on accurate information extracted from the internal traceability system / database and requires close collaboration between all the parties involved. Food safety and quality assurance functions control the status of the products and communicate these to supply chain distribution, which is responsible for applying this status and treating the products accordingly.

The objective of stock withdrawal process is to prevent availability of the product at the point of sale. Stock withdrawal requires total control of the stock. This means that all supply chain partners implicated in the stock withdrawal process must be able to correctly identify the product (i.e. GTIN, SSCC) and the batch/lot code involved, its location and the quantity stored there. The traceability process ensures that the trade partners can answer these questions.

Best practice for stock withdrawal is based on the following principles:

- Stock withdrawal management is based on the logistic units using the SSCC as the identifier
- Pallet contents are identified using the product identification (GTIN) and batch/lot codes
- Pallet tracking within the area controlled by the brand owner means from internal / external origin to internal / external destination
- Targeted withdrawal at destinations, which have or may have received the incriminated goods
- Companies must define procedures for the identification of blocked goods, communication and instructions for withdrawal
- Regular training and periodical exercises

Traceability of bananas on batch/lot level ends at the retail distribution centre. The brand owner must therefore assume that the product is already available at the point of sale and initiate a recall after delivery to the retail distribution centre. Depending on the nature and severity of the quality or safety issue, a recall could include broadcasting information to all potential consumers via mass media. The implicated product and batch/lot must be identified and exchanged if not already consumed. Batch/lot tracking in the retail distribution centre is complex and expensive due to its large portion of mixed pallets sent to the points of sale and received from suppliers. Due to the lack of tracking in the retail distribution centre, all the stores of the concerned retailers must be included in the recall.

Developing Internal Competences and Skills

Regular training should be given to all the employees, who may be involved in product traceability, incident and crisis management. The scope of this training should include:

- Traceability processes implemented by the company, based on the best practice documented in this document
- Instruction on incident / crisis management
- Role of the Incident / Crisis Management Team
- Role of the person being trained
- Whom to contact
- The importance of coordinated actions and communication within the company
- What to do and what to avoid taking
- How to use the documentation
- How to use the product traceability and record systems

The training should also include simulated exercises on:

- Product Traceability
- Crisis Management
- Product withdrawal
- Product recall
- Management of quarantined stock



ANNEX

CONTACT DETAILS OF GS1 MEMBER ORGANISATIONS IN SOME OF THE MAJOR BANANA PRODUCING COUNTRIES AND TERRITORIES

Belize	info@ean-int.org
Brazil	ean@eanbrasil.org.br
Cameroon	info@ean-int.org
Chile	eanchile@eanchile.cl
Colombia	iacol@attglobal.net
Costa Rica	informacion@eancostarica.or.cr
Dominican Republic	ean_rd@eanrd.org.do
Ecuador	ecop@uio.telconet.net
Guatemala	eanguatemala@eanguatemala.org.gt
Honduras	diselco@eanhonduras.org
Ivory Coast	info@ean-int.org
Jamaica	info@ean-int.org
Martinique	infos@gencod-ean.fr
Nicaragua	eannicaragua@eannicaragua.org.ni
Panama	info@eanpanama.org
Peru	eanperu@eanperu.org.pe
South Africa	info@cgcsa.co.za
Venezuela	jmejia@eanve.org

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