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PROCEDURE FOR EXPORTS OF BETEL LEAVES TO EUROPEAN UNION



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Procedure for Exports of Betel Leaves to EU

Background

There is an ongoing need for control of *Salmonella* spp. in Betel Leaves consignments exported from India to EU. In order to ensure the compliances, Betel Leaves require adequate monitoring at every level to minimize *Salmonella* spp. and other micro organisms. It is necessary to check export consignments of Betel Leaves to the EU through implementation of Good Agricultural Practices (GAP) and Good Hygienic Practices (GHP) and a Certificate of analysis is issued stating that the product complying with the requirements of importing country.

European Union vide Regulation (EU) No. 2017/186 dated 2nd February 2017 laying down specific conditions applicable to the introduction into the Union of consignments from third countries due to microbiological contamination and amending Regulation (EC) No. 669/2009 requirement of Health Certificate with 10% frequency of physical check on incoming consignments of Betel Leaves from India. The Betel Leaves consignments shall have to accompany certificate stating that the product have been produced, under conditions which comply with Regulation (EC) No 852/2004 and 882/2004, the consignment, samples were taken in accordance with Regulation (EU) 2017/186 with a view to check the *Salmonella* spp. and the certificate is stamp and signed by authorised representative of Competent Authority. To comply with the EU requirements for export of Betel Leaves, the existing DGFT Notification No. 1/2015-20 dated 8th April 2016 suffices the objectives.

The existing Procedures have since been suitably modified integrating EU requirement of analysis certificate and revised Health Certificate. The revised Procedure shall be administered by APEDA. Accordingly, following procedures shall be followed by the exporters, laboratories and other stakeholders for export of Betel Leaves to EU:

1.	Objectives	1.1	To establish a system for control of <i>Salmonella</i> spp. and other micro organisms in exportable betel leaves at the farm, pack house level and during transportation.
		1.2	To monitor microbial load in betel leaves at pack house level or prior to exit point.
		1.3	To ensure traceability of the betel leaves up to final point of discharge.
		1.4	To establish a system for corrective action in the event of detection of <i>Salmonella</i> spp. and other harmful micro organism as well as in the event of Rapid Alert from the importing countries.
		1.5	To ensure that betel leaves exported from India to the European Union countries (Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and United Kingdom) as well as countries following EU

			food safety standards and other importing countries having food safety compliance norms.
		1.6	To establish a mechanism to provide recognition of exporters and laboratories by APEDA in order to ensure export of quality betel leaves to the importing countries.
2.	Scope	2.1	This document covers the APEDA recognized pack houses, exporters, APEDA recognised certification bodies, APEDA recognized laboratories authorized for sampling, analysis and issue of Health Certificate of betel leaves and personnel engaged by them and the State/Central Government organizations (DPPQS/ NPPO/NRL/respective State Government Agriculture/ Horticulture Departments (SAD/SHD)/Indian Council of Agriculture Research (ICAR) and its institutions.
3.	Procedure for Sampling and Analysis	3.1	The procedure of sampling of Betel Leaves shall be in accordance with Article 4 C implementing Regulation (EC) No 2017/186 dated 2 nd February 2017 laying down specific conditions applicable to the introduction into the Union of consignments from third countries due to microbiological contamination and amending Regulation (EC) No. 669/2009.
		3.2	The authorized laboratories shall perform sampling in accordance with Chapter III ‘Sampling and analysis’ in Title II of Regulation (EC) No. 882/2004. In particular, the sampling shall be performed in accordance with the relevant standards of the ISO (International Organisation for Standardization) and the guidelines of the Codex Alimentarius used as reference and the analysis for <i>Salmonella spp.</i> shall be performed according to the reference method EN/ISO 6579 (the latest updated version of the detection method) or a method validated against it in accordance with the protocol set out in EN/ISO 16140 other internationally accepted similar protocols.
		3.3	The APEDA recognized laboratories authorized for sampling and analysis of Betel Leaves shall sample Betel Leaves meant for exports either from the registered producing farms or from APEDA recognized Pack House.
		3.4	The APEDA recognized laboratories authorized for sampling and analysis of Betel Leaves shall use method of analysis as per EN/ISO 6579 (the latest updated version of the detection method) or a method validated against it in accordance with the protocol set out in EN/ISO 16140 or other internationally accepted similar protocols.
		3.5	In case of samples drawn at the packhouse, the exporter/recognized packhouses shall maintain segregation of produce in such a manner it should be tracked to the farm(s) or farm(s) following uniform pre

			harvest practices and the producing farms are in contiguous area.
		3.6	The List of APEDA recognized Pack Houses is given in Annexure-1 .
		3.7	The exporters and pack houses shall inform to the authorized labs for sampling of Betel Leaves as per format given in Annexure-2 .
		3.8	List of APEDA recognized laboratories authorized for sampling and analysis and Health Certificate for export of Betel Leaves is given in Annexure-3 .
		3.9	The authorized laboratories shall analyze samples as per methods of analysis referred at para 3.3 above for <i>Salmonella</i> spp. absent in /25g. The methods shall be confirmatory and validated. If any one of five sub-sample analyses fails, the whole sampled quantity fails for exports.
		3.10	A consignment of Betel Leaves may comprise from optimum 20 farms, provided these farms follows uniform pre harvest practices and maintains same PHI (Pre Harvest Intervals) so that the samples drawn for analysis are homogenous of the supplying farms.
		3.11	Authorized person of the authorized laboratory shall draw the sample and transfer the drawn samples (including the control samples) to the laboratory immediately but not later than 24 hours from the date and time of drawl of samples.
		3.12	The lab shall issue analysis results within 72 hours from the date and time of drawl of the sample.
		3.13	Guidelines of method of sampling referred at para 3.2 above to be followed by the laboratories is given in Annexure-4 .
		3.14	Each consignment of Betel Leaves shall accompanied by results of sampling and analysis performed by the authorized personnel of APEDA approved Laboratory verifying absence of <i>Salmonella</i> spp. Format of analysis report of <i>Salmonella</i> spp. in Betel Leaves is given in Annexure-5 .
		3.15	It shall be mandatory for the authorized laboratories to issue Analysis certificate and Health Certificate from Online module for laboratories for exports of Betel Leaves.
4.	Requirements of Authorized Laboratories	4.1	All the laboratories shall be ISO/IEC-17025 accredited by National Accreditation Board for Testing and Calibration Laboratories (NABL) for the scope of microbiological analysis with a specific reference to <i>Salmonella</i> spp. in Betel Leaves.

		4.2	All the laboratories shall have APEDA recognition under relevant scheme for recognition.
		4.3	The authorized person of laboratory shall draw sample in the late evening of the harvest day or early morning from the APEDA recognized Pack Houses or a registered farm.
		4.4	Responsibility of sampling as per Annexure-4, transfer of samples to the lab and issue of analytical results within 72 hours from the date and time of drawl of the sample shall be of the laboratory.
		4.5	The authorized laboratories shall retain counter sample(s) in controlled conditions below plus 8°C for Betel Leaves for a period of 10 days from the date of drawl of the samples.
		4.6	The authorized labs shall issue Analysis and Health Certificate as per defined procedure.
5.	Responsibilities of exporter/ Pack Houses	5.1	Onus of maintaining appropriate sorting, grading, handling, processing, packing and transportation in line with the good hygienic and sanitation practices envisaged by the importing country's food safety compliance requirements shall be of exporter and packhouse. The exporters and pack houses shall also have responsibility to comply with the <i>Salmonella</i> spp. absent in /25 g in the Betel Leave consignments being exported by them to EU destinations.
		5.2	The recognized pack house(s) shall label Betel Leaves consignment of each box as per the format given in Annexure-6 .
		5.3	The recognized Pack Houses shall ensure that each box will carry a label with a Unique Identification Code (UIC). For example AAA Exports from Kolkata/Mumbai could be AAAPHL000FFF (AAA denotes the packhouse name, PHL denotes location of packhouse and 000 denoted packhouse Certificate Number and F123 denotes farm registration number). The same UIC shall be mentioned in packages by the exporter (Annexure-5).
		5.4	Exports/packhouse shall comply with recommended PoP, GHP, declaration & farm registration instructions as given in Annexure-7 .
		5.5	The exporter shall report to APEDA about rejection of Betel Leaves by the importing countries within 2 working days from the date of such rejection, failing which APEDA will suspend recognition of concerned pack house in which the produce was processed
		5.6	All APEDA recognized Pack Houses shall maintain record of the sources (farmers & suppliers) of Betel Leaves in such a manner that

			the consignment exported can be traced back to the source. The record shall be made available to the laboratory representative at the time of sampling.
		5.7	The APEDA recognized pack house(s) shall maintain a detailed log sheet of all the lots and consignments of Betel Leaves exported from its facility. This needs to be submitted to APEDA on a daily basis by the next working day which APEDA can inspect any time.
		5.8	The consignment found non-compliant with importing country's requirement shall be immediately evacuated from the establishment.
6.	Procedure for issue of Health Certificate	6.1	The authorized personnel of APEDA approved laboratory shall issue Health Certificate as per the guidelines prescribed in this respect.
		6.2	Health Certificate shall be issued by authorized person of APEDA approved laboratories in the format given in Annexure-8 .
7.	Functions of APEDA	7.1	Overall monitoring will be carried out by APEDA alongwith informing to Custom Houses in all exit air/sea/inland ports of India to verify compliances such as Certificate of Analysis and Health Certificate issued by authorized person of labs accompanying consignments of Betel Leaves meant for exports to EU destinations.
		7.2	APEDA will regularly monitor the functioning of each stakeholder to ensure implementation of these procedures.
8.	Penal Provision and appeal	8.1	In the event of breach of these procedures by any of the stakeholders, APEDA may initiate action as per the provision of APEDA Act, 1985 subject to jurisdiction of New Delhi, in addition to the followings.
		8.2	Action against exporter: <ul style="list-style-type: none"> • On 1st failure: Warning to the concerned exporter. • On 2nd failure: 15 days' temporary suspension on export of Betel Leaves by the concerned exporter/packhouse. Labs will not draw samples from the banned exporter/packhouse. • On 3rd failure: Suspension of exporter/packhouse. Suspended exporter shall not be allowed to undertake exports from any other APEDA recognized pack house(s). Labs will be intimated in this respect not to draw samples from such exporter/packhouses.
		8.3	Suspended exporter/packhouse may reapply for approval followed by satisfactory demonstration of compliance requirements.

		8.4	<p>Action against laboratory:</p> <ul style="list-style-type: none"> • In case of any deviation by laboratory from method of sampling and analysis as given in Annexure-4 of these procedures as well as difference in analysis report issued by the lab vis-a-vis the results of laboratory of importing country, authorization of the laboratory will be suspended. • In case of frequent failure of consignments sampled, analyzed certified by a lab issuing Health Certificate, APEDA will take action as per laboratory recognition procedure as well as recommend to NABL to withdraw accreditation of the concerned lab.
		8.5	Any exporter or laboratory may appeal within 15 days to the Chairman, APEDA to seek redressal.
9	Restoration of approval	9.1	APEDA will conduct re-inspection of packhouse/lab, if required, to verify the compliances established by the exporter/lab.
		9.2	Upon satisfactory compliance APEDA will intimate the exporter/packhouse/laboratory about restoration of export activity and sampling & analysis as well as certification of Betel Leaf consignments.

Place: New Delhi
Date: 03/03/2017

Signed/-
D K Singh
Chairman, APEDA

Annexure-1

List of APEDA recognized packhouses for exports of Betel Leaves*

Sl. No.	Name & Address of APEDA recognized Pack houses	APEDA Recognition No.	Valid Up to	Name & Address of Agmark CA holder of APEDA recognized Pack house	CA No. & Valid Up to	NPPO approval of packhouse
Please refer to APEDA website for Annexure-1, List of recognized packhouses for exports of Betel Leaves						

*Approval of packhouses for exports of Fresh Fruits and Vegetables is a continuous process. List of APEDA recognized packhouses could be downloaded from its website www.apeda.gov.in

Sample slip for Betel Leaves

Unique identification code _____ Sample slip No. _____

No.	Contents	Details
1.	Name and address of exporter	
2.	Name & address of the packhouse	
3.	Packhouses Recognition No. & its validity	
4.	Crop and variety	
5.	Total quantity (in number of boxes, net weight and gross weight declared by exporter/establishment) covered in this sample slip	
6.	Crop condition pertaining to pests and diseases	
7.	Weight of total sample	
8.	Weight of the laboratory sample (including control sample)	
9.	Date and time of drawl of sample in the packhouse/Farm	
10.	Number of farms from whose produce sample drawn (farms monitored by exporter/establishment and the farms following uniform practices)	

Signature of Exporter
Name of exporter

Signature of packhouse representative
Name of representative of packhouse

Certificate

This is to certify that:

1. I, _____ (Name of the authorized sampler of the authorized lab) have drawn this sample from the above establishment by adopting the method of sampling given in Annexure-4 of Procedure for export of Betel Leaves.
2. This sample is taken from the above establishment/farm, which is intended to be exported by _____ (name of the CA holder exporter). There is no application of agri inputs, spray, irrigation, etc. between sampling and harvesting (in case of sample drawn from the farm).
3. I have also obtained a copy of the packhouse recognition Certificate/Farm registration.
4. That, as on date, APEDA recognition of this laboratory is valid.

Date:
Place:

Signature :
Name of authorized :
Representative of
Authorized Laboratory
Official address :

Annexure-3

*List of authorized laboratories for sampling & analysis and issue of Health Certificate for exports of Betel Leaves

No.	Name and contact details of the laboratory	Scope
1	Edward Food Research & Analysis Centre Ltd. (EFRAC) Subhas Nagar PO Nilgunj Bazar, Barasat Kolkata 700 121 Tel: 033-71122800 Fax: 71122801 efraclab@efrac.org; balwinderbajwa@efrac.org; arijitbhowmick@efrac.org; ashmitasarkar@efrac.org;	Accredited to ISO-17025 by NABL, recognized by APEDA for microbiological parameters
2	Envirocare Labs Pvt. Ltd., A-7 MIDC Wagle Industrial Estate Main Road Thane 400 604 Tel: 022-25838286-88 Fax: 25838289 info@envirocare.co.in; meenal.s@envirocare.co.in; priti.a@envirocare.co.in;omkar.m@envirocare.co.in; Nilesh.a@envirocare.co.in	-do-
3	First Source Laboratory Solutions LLP (Analytical services) 1 st Floor Plot No. A1/B, IDA Nacharam Cross Road Hyderabad 500 076 Tel: 040-27177036 Fax: 040-27174037 crm@firstsourcels.com; sudhakar@firstsourcels.com;	-do-
4	Geo Chem Laboratories Pvt. Ltd. Pragati, Adjacent to Crompton Greaves Kanjur Marg (E) Mumbai 400 042 Tel: 022-61915100 Fax: 022-61915101 sureshabu.p@geochem.net.in; laboratory@geochem.net.in;	-do-
5	SGS India Pvt. Ltd. Opposite to State Bank of India 28 B/1 (SP), 28 B/2 (SP) 2 nd Main Road Ambattur Industrial Estate Chennai 600 058 Tel: 044-66693109 Fax: 24963075 av.abraham@sgs.com; dipjyoti.banerjee@sgs.com;	-do-
6	TUV India Pvt Ltd. Survey No: 423/1 & 3/2 Near Pashankar Auto (Baner) Sus-Pashan Road Pune 411 021 Tel: 020-67900000 foodlab@tuv-nord.com; mumbai@tuv-nord.com;	-do-
7	Shriram Institute for Industrial Research 19 University Road, Delhi 110007 Tel: 011-27667267, 27667860, 27667436 Fax: 27667676, 27667207 doff@shriram institute.org; kmchacko@shriram institute.org;	-do-
8	Interfield Laboratories XIII/1208, Interprint House Kochi 682 005 Tel: 0484-2217865, 2210915, 221838 mail@interfieldlaboratories.com;qm@ifl.in; gm@ifl.in; jp@ifl.in;	-do-

*Authorization of labs for sampling and analysis is a dynamic process. Updated list of labs authorized for sampling and analysis for Betel Leaves can be downloaded from APEDA website: www.apeda.gov.in

Guidelines on Method of sampling for determination of *Salmonella* spp. for exports of Betel Leaves

Sampling and analysis of Betel Leaves shall be carried out in accordance with Article 4 C implementing Regulation (EC) No 2017/186 dated 2nd February 2017 laying down specific conditions applicable to the introduction into the Union of consignments from third countries due to microbiological contamination and amending Regulation (EC) No. 669/2009.

The authorized laboratories shall perform sampling in accordance with Chapter III 'Sampling and analysis' in Title II of Regulation (EC) No. 882/2004. In particular, the sampling shall be performed in accordance with the relevant standards of the ISO (International Organisation for Standardization) and the guidelines of the Codex Alimentarius used as reference and the analysis for *Salmonella* spp. shall be performed according to the reference method EN/ISO 6579 (the latest updated version of the detection method) or a method validated against it in accordance with the protocol set out in EN/ISO 16140 and other internationally accepted similar protocols.

The sampling shall be carried out either at APEDA recognized pack-houses/establishments or at registered farms. A representative sample of produce shall be drawn from a lot traceable with unique identification code. Simplified guidelines of method of sampling referred at para 3.2 of these Procedures are given as follows:

Definition of lot and consignment

A quantity of material at one time and known, or presumed, by the sampling officer to have uniform characteristics such as origin, producer, variety, packer, type of packing, markings, consignor, etc.

Each lot shall have a unique identification code which shall be clearly mentioned on the outside (external part) of the corrugated box.

A consignment may consist of one or more lots. In case where a consignment is comprised of lots which can be identified as originating from different growers (following different practices), etc., each lot shall be sampled and analyzed separately. Similarly, one lot can also have more than one consignment. Even in such cases, there shall be one sampling and analysis for that lot.

To establish traceability of the produce, the sampling shall be done either from APEDA registered pack-houses or from the farm. In case, a consignment is created by mixing produce from more than one farm (following different practices) or different lots, then each individual farm produce or lot shall be given a unique identification code, sampled separately and analyzed individually. Thus, e.g. if a consignment contains produces from 20 different farms (following different practices) or lots, then the consignment shall carry 20x5 separate analysis. If any of the analysis indicates non-compliance to the microbial load of *Salmonella* spp. then that particular lot shall not be included in the consignment.

In case the farm(s)/group of farm(s) are monitored by exporter(s) and the farm(s) following uniform production practices, the exporter may opt for sampling and analysis of produce either as mentioned above or consignment wise.

A consignment of Betel Leaves may comprise produce of optimum 20 farms, provided these farms have adopted uniform pre harvest practices and are maintaining same PHI so that the samples drawn for residue analysis are homogenous and representative of the supplying farms.

Materials required for sampling (sterilized)

- Large Polythene bags, hand gloves, hand sanitizer
- Knife, cutter, seizer, cleaning solution, tags seals

Paperwork

- Sample slip (as given in Annexure-2)
- Stand Operation Procedures (SOP) of Sampling procedures in local language or in English

Contamination and deterioration of samples must be prevented at all stages, because they may affect the analytical results. Each lot to be checked for compliance must be sampled separately.

Avoid sampling from wet boxes, if the weather is bad. Many contaminants are water soluble so rainwater could result in cross-contaminating other boxes.

The minimum of primary samples to be drawn from a lot is as given below:

Table-1

Commodity classification	Nature of primary sample to be taken	Minimum size of each laboratory Sample
Betel Leaves (Units generally < 5g)	Whole units	400 g (around 10 g from 40 primary sampling locations)

The selected lot of Betel Leaves shall be divided into 40 primary sampling locations covering 2 locations of each farm’s produce. Draw samples of 5 gram from each location as described in table given above. Irrespective of number of optimum supplying farms in one consignment, primary sampling shall be done from minimum 40 locations as described in the above table.

The laboratory sample shall be thoroughly mixed up by quartering technique and divided into 2 parts:

- (i) Sample for direct analysis by the laboratory (half quantity of produce)

- (ii) Control sample for further analysis in future, (half quantity of produce). The authorized laboratories shall retain control sample(s) in controlled conditions in Cold Store at appropriate temperature for a period of 10 days from the date of issue of analysis certificate.

Packing and transport of sample

The samples should be packed separately in clean and virgin polythene bags designed for transport of Betel Leaves. Sample slip given at Annexure-2 should be kept in a polyethylene cover and the same should be inserted in the bags. The bags should be labeled from outside with the following information:

- Sample for *Salmonella* spp. analysis of Betel Leaves
- Sample slip number
- Date of sampling
- Time of sampling
- Unique identification code of the lot
- Farmer identification code
- Name of the authorized representative (sampler) of the laboratory with signature

Sealed samples shall reach the laboratory within 24 hours of sampling from the packhouse/ establishments/farms. Enough care should be taken to prevent any spoilage of the samples during transit.

Format of Laboratory Analysis Certificate for exports of Betel Leaves from India to EU

<u>GENERAL</u>	
Analysis report issued to: M/s. _____(Name and address of exporter):	Report No.:
APEDA RCMC No. & IE Code of the exporter :	Issue date:
Name and address of APEDA approved Packhouse : (if sampled at packhouse with seal no.)	Exporter's ref:
Packhouse recognition No. & validity :	Page no. ___ of ___
Name, address & registration No. of farmer : (if sampled at farm)	

<u>SAMPLE DETAILS</u>	
Sample Slip No :	Sample Quantity Received :
Sample Receipt Date :	Sample drawn by :
Sample Registration Date :	Mode of transport and
Sample Registration No. :	condition of sample on receipt :
Sample Type : Betel Leaves	at lab for analysis
Batch No. :	
UIC No.(refer annexure-6):	
Destination of exports :	
<u>SAMPLE ANALYSIS DETAILS</u>	
Analysis Starting Date :	Analysis Completion Date :

TEST RESULT

Sr. No.	Test Parameter	Unit of Measurement	Method used	Instrument used	Limit of quantitation	Requirements	Results
Sub-sample1	<i>Salmonella</i> spp.	Absent /25gm				Absent	Absent/ Present
Sub-sample2	<i>Salmonella</i> spp.	Absent /25gm				Absent	Absent/ Present
Sub-sample3	<i>Salmonella</i> spp.	Absent /25gm				Absent	Absent/ Present
Sub-sample4	<i>Salmonella</i> spp.	Absent /25gm				Absent	Absent/ Present
Sub-sample5	<i>Salmonella</i> spp.	Absent /25gm				Absent	Absent/ Present

This is to certify that the above sample has been drawn and analyzed by authorized person(s) of this laboratory as per the EU Regulation 2017/186 compliance requirements. The sample fail/pass. Consignments qualify/not qualify for shipment.

Authorized person of approved laboratory

Name (in capital letters):
Date & Place:
Laboratory Stamp:

Qualification and title:
Signature:

Label to be affixed in each box meant for exports of Betel Leaves
(To be affixed by the exporter/recognized packhouse)

Name of Produce	Betel Leaves
Date of harvest	dd/mm/yy
Date of packing	dd/mm/yy
Unique Identification Code	AAAPHL000F123

- AAA: Three alphabet code name of exporter to be given by APEDA
PHL: Three alphabet packhouse location code to be given by APEDA
000: Three numeric packhouse approval number code to be given by APEDA
F123: Four Alphanumeric Farmer registration code to be given by exporter

1. Package of Practices (PoP) as given in Appendix 1.
2. Good Hygiene Practices (GHP) as given in Appendix 2.
3. Declaration to be given by the exporter in Appendix-3 to the pack houses that Package of Practices and Good Hygiene Practices for betel leaves have been followed.
4. Pack house have to register the farms as per Appendix-4, confirming that the raw material is sourced from the registered farm only. It has to also verify soil and water test reports of laboratory and declaration from the exporter before allowing betel leaves for exports.
5. Since soil and water are primary source of contamination of Salmonella, it is important to do soil and water testing, which may be done from APEDA recognized laboratory. (The details are given in http://apeda.gov.in/apedawebsite/HACCP/recognized_laboratories)
6. Betel Leaves to be processed only in APEDA recognized pack houses. (The details are given in http://apeda.gov.in/apedawebsite/Announcements/list_of_pack_house_fruits_vegetables.pdf)

Package of Practices of Betel Leaves (*Piper betle*)

Introduction: The Betel is the leaf of vine. In India, it is known as “Paan”. Betel vine is a perennial, evergreen climber which grows in tropics and subtropics. Betel leaf is mostly consumed in Asia and elsewhere in the world by some Asian emigrants. Today betel is grown for local consumption and exports. Major betel leaves growing countries are Sri Lanka, India, Thailand and Bangladesh. Pakistan is the major importer of Sri Lankan betel.

Betel Leaves growing States in India: Betel leaves are also cultivated in the states of Assam, Andhra Pradesh, Bihar, Gujarat, Odisha, Karnataka, Madhya Pradesh, Rajasthan, West Bengal and Maharashtra.

India Exports Betel Leaves to: Afghanistan, Australia, Bangladesh, Canada, France, Germany, Hongkong, Kenya, Nepal, United Kingdom, UAE, Saudi Arabia, Oman, Pakistan, Qatar, USA, Yeman and United Kingdom. In 2013-14, India earned nearly \$ 40 lakh through export of Betel Leaves (Source: Times of India, Jun 25, 2014)

Climatic Requirements: Tropical climate, high rainfall and a shady place are best for its vigorous growth. Betel is a sun loving plant but produces better quality leaves in the wet zone and intermediate zones rather than in the dry zone. Appropriate shade levels and irrigation are essential for successful cultivation of the crop. Hot dry winds are harmful and retard the growth of the vine.

Season: Planting season in different Betel Leaves growing states are as follows -

- ❖ Assam - April-May and August-September
- ❖ Andhra Pradesh – September-October
- ❖ Bihar – June-July, September and May-June
- ❖ Karnataka- July-August
- ❖ Maharashtra- July-August and October-November
- ❖ Madhya Pradesh- January-March and September-November
- ❖ Odisha- May-June and September-November
- ❖ West Bengal- June-July and September-October

Soil Requirements: Soil with good organic matter (i.e. C: N ratio) and drainage system is best suited for betel vine growth. However, it can be grown on different types of soils such as heavy clayey loam, and sandy loam soils.

Soil preparation: Soil should be prepared well by 4–5 ploughings and land should be raised by 5–10cm from the adjacent areas, providing proper gradient on both sides for quick drainage. Afterwards, field beds of suitable size (15cm high and 30cm broad) are prepared. Before planting the cuttings, soil should be sterilized thoroughly.

Soil Sterilization: During hot summer months (March–May), when the soil temperature rises sufficiently, soil is covered using polyethylene sheet in order to destroy inoculum of soil-borne pathogens. For new plantations, application of Carbofuran 3G @ 1.5 kg/ha or neem cake (0.5 tonnes/ha) + Carbofuran (0.75kg/ha) is also recommended to minimize initial soil nematode population. However, Carbofuran should not be recommended in established gardens at any stage

because a time gap of 65–70 days as safe waiting period is required between application and harvesting of leaves.

Important Varieties: Based on shape, size, brittleness and taste of leaf blade, betel vine is classified into pungent and non-pungent varieties.

States	Popular varieties
Andhra Pradesh	Karapaku, Chennor, Tellaku, Bangla and Kalli Patti
Assam	Assam Patti, Awani pan, Bangla and Khasi pan.
Bihar	Desi pan, Calcutta, Paton, Maghai and Bangla
Karnataka	Kariyale, Mysoreale and Ambadiale
Odisha	Godi Bangla, Nova Cuttak, Sanchi and Birkoli
Mahdy Pradesh	Desi Bangl, Calcutta and Deswari
Maharashtra	Kallipatti, Kapoori and Bangla (Ramtek)
West Bengal	Bangla, Sanchi, Mitha, Kali Bangla and Simurali Bangla.

Propagation: Stem cuttings having 3-5 nodes are used for propagation and these are planted in such a manner that 2-3 nodes are buried in the soil. A single node cutting with a mother leaf is also planted. Cuttings of the apical and middle portions of the vine are used for planting. Betel vine are to be planted 4-5 months earlier.

Cultivation Practices: Two types of cultivation are practiced in India: Open system of cultivation using support plants and closed system of cultivation using artificial rectangular structures called barejas.

Irrigation: Since betel vine requires high soil moisture, frequent light irrigation depending upon the season is to be given. Irrigation should be need-based and proper drainage is essential for draining of excess water. Water should be clean and free from microbial contamination.

Standard quality specifications: There are no specific quality parameters for betel leaves. However, for export of quality betel leaves the following criteria may be considered:-

Size of the leaf – At least 20cm in length and 15cm width

Stem of the leaf must be 2.5-3 cm

Colour - well matured dark green colour leaves

Freshness of the leaves

Insect Pests and diseases – Insect pests - Scale insect (*Lepidosaphes cornutus*)

Identifying characters - Sometime attains pest status in betel vine. They are mostly noticed on the base portion of stems/leaves. The scale insects are either light brown or dark brown in colour.

Damage symptoms - Both the nymphs (crawlers) and adults suck the sap and the infested leaves lose their colour, vigour and exhibit waxy appearance. In case of severe damage the infected leaves become crinkle and dry up ultimately and affected leaves lose their market value.

Management –

- Spraying of NSKE 5% at the infested portion is beneficial. Before spraying matured/marketable leaves should be harvested (Source: Tamil Nadu Agricultural University Agritech portal-Horticulture).

Mealy bugs (*Ferrisia virgata*)

Identifying characters – Immature stages or crawlers are yellowish to pale white in colour whereas adult females are apterous, long, slender covered with white waxy secretion.

Symptoms of damage: Presence of white, cottony mealy bugs on the leaves and twigs. They suck the sap from the leaves and growing parts resulting devitalization of the leaves and stunted growth of the plants.

Management:

- Collection and destruction of the damaged plant parts.
- Conservation of the predators viz., *Chrysoperla zastrowi sillemi*, *Coccinella septempunctata*, *Menochilus sexmaculatus*, *Cryptolaemus montrouzieri*
- Spray Fish oil resin soap (FORS) @ 25g/lit or neem oil 0.5% along with teepol 1 ml/lit of water. Before spraying matured/marketable leaves should be harvested (Source: As recommended by IIVR, Varanasi).

Note – No insecticide is mentioned against betel vine insect pests as per CIB&RC as on 31/10/2014

Diseases:Foot rot or Leaf rot or wilt

Causal organism: *Phytophthora parasitica* var. *piperina*

Symptoms: Vines are infected at all the stages of crop growth. Initially symptoms are associated with sudden wilting. Yellowing and drooping of the leaves from tip downwards are observed on the affected vines. The leaves become dull due to loss of lustre. The affected plants dry up within 2 or 3 days completely. Stems become brown, brittle and dry as stick. The lower portion of the stem near the soil level displays irregular black lesions. Later diseased internodes become soft and undergo 'wet rot', slimy emitting fishy odour. The roots of the infected plants also show rotting. In the young crop, the fungus produces 'Leaf rot' symptoms. The leaves within 2-3 feet height of the vine show the leaf rot symptom.

Management:

- Soak the seed vines in Streptocycline* 500 mg/L + Bordeaux mixture* 0.05 %t solution for 30 minutes.
- Collect and destroy the infected vines and leaves.
- Regulate irrigation during the cold weather period.
- Drench the soil with 0.5 per cent Bordeaux mixture at 500 ml/hill during the cool weather period (October-January) at monthly intervals.

(Source: Tamil Nadu Agricultural University Agritech portal-Horticulture)

*Note: No label claim as per CIBRC

Sclerotium foot rot and wilt

Causal organism: *Sclerotium rolfsii*

Symptoms- All stages of vine are susceptible to the disease. Infection starts at the collar region associated with whitish cottony mycelium on the stem and roots. The stem portion shows rotting tissues at the point of attack and the plants show dropping of leaves and dies.

Management

- Removal and destruction of the affected vines along with the roots and should be burnt.
- Apply mustard cake or farmyard manure to soil.
- Drench the soil with Carbendazim.0.1%

(Source: Tamil Nadu Agricultural University Agritech portal-Horticulture)

*Note: No label claim as per CIBRC

Powdery mildew- Causal organism: *Oidium piperis*

Symptoms - The disease affects the crop at all stages of its growth and infection is mainly noticed on tender shoots and leaves. Whitish powdery growth is seen on both the surface of leaves which later enlarges and cover the major portion of the leaves finally ends up in defoliation.

Management

- Collect and burn the infected leaves.
- Spray 0.2 per cent Wettable Sulphur or dust Sulphur at 25 kg/ha after plucking the leaves (Source: Tamil Nadu Agricultural University Agritech portal-Horticulture).

*Note: No label claim as per CIBRC

Anthracnose-Causal organism: *Colletotrichum piperis*

Symptoms: Leaves show small circular black spots initially which later develops, enlarge with concentric nature and covered with a yellow halo to a size of 2 cm. The affected leaves turn pale yellow and dry up with large black dots in the centre of the spots. Similar spots were seen on the stem portion and as the disease progress leads to girdling o stem finally resulting in withering and drying of entire plant.

Management

- Collect and destroy the infected vines and leaves.
- Spray Ziram* 0.2 % or Bordeaux mixture* 0.5% after plucking the leaves (Source: Tamil Nadu Agricultural University Agritech portal-Horticulture).

*Note: No label claim as per CIBRC

Bacterial leaf spot or stem rot –Causal organism: *Xanthomonas campestris* pv. *betlicola*

Symptoms: The disease initiates as tiny, brown water soaked specks on the leaves surrounded by a yellow halo, which enlarge later and become necrotic and angular, mostly confined to interveinal areas. Under favourable condition, infection spreads to stem causing blackening of nodes and intermodal region ultimately leads to withering and drying of plants. The infected leaves lose their lustre, turn yellow, show withering and fall off.

Management

- Remove and burn the infected vines and stubbles in the field.

- Regulate irrigation during cold weather season.
- Spray Streptocycline* 400g/L +Bordeaux mixture* 0.25 % at 20 days intervals, after plucking the leaves (*Source: Tamil Nadu Agricultural University Agritech portal-Horticulture*).

*Note: No label claim as per CIBRC

Harvesting and Post Harvest practices: Generally betel vine is ready for harvest after 2-3 months of planting and thereafter for every 15-25 days. However, harvesting is started when the betel vine is grown up to 1.2 1.8 mt. in length. Leaves are harvested from the lower portion of the stem. Initially matured leaves are removed in lower parts of the main stem 2-3 times. After that betel leaves are harvested both from main stem and lateral stems. For export market betel is harvested from three weeks intervals and for local market in two weeks intervals.

Harvested leaves to be washed cleaned and graded according to their size and quality. Then they are packed after cutting a portion of the petiole and rejecting the damaged leaves.

For cleaning and washing clean & microbial free water is to be used. Handling workers to sanitize their hands follow proper personnel hygiene.

Post harvest operation to be carried out in APEDA recognized pack house to meet the international standards in terms of quality of produce with quarantine safety.

Table A. List of recommended insecticides against different insect pests of betel leaf (without label claim)

Name of the insect pest	Common name of pest	Dosage	Recommended by
Malathion 50 EC	Scale insect	1 ml/lit	TNAU*, Coimbatore
Chlorpyrifos 20 EC	Scale insect Mealy bugs	2 ml/lit	TNAU*, Coimbatore
Dimethoate 30 EC	Mealy bugs	2ml/lit	TNAU*, Coimbatore

*http://agritech.tnau.ac.in/horticulture/horti_plantation%20crops_betelvine.html visited on 17/07/2015

Table B. List of recommended fungicides against different diseases of betel leaf (with label claim) Registered under the Insecticides Act, 1968 AS ON 31.08.2015

Name of the fungicide	Disease	Dosage /ha		
		a.i. (g/ml)	Formulation g/ml	Dilution in water (L)
Copper Oxy chloride (COC) 50% WP	Foot Rot Leaf Rot	1.25	2.5	750-1000

Note: It is important to note that above recommendation with regard to use of Agrochemicals are recommendatory in nature, based on the secondary literature quoted above. The recommendation of the State Government with respect to use of agrochemicals may be followed, as they are fine tuned to the local requirements.

Good Hygiene Practices for Betel Leaves

INTRODUCTION:- Regular rapid alerts in Betel Leaves has raised concerns. The following good hygiene practices (GHP) has to be followed:

1. OBJECTIVES OF THE CODE:- This code addresses Good Agricultural Practices (GAPs) and Good Hygiene Practices (GHPs) that will help control microbial, chemical and physical hazards associated with betel leaves from primary production to packing. Particular attention is given to minimizing microbial hazards. The code provides a general framework of recommendations to allow uniform adoption by this sector rather than providing detailed recommendations for specific agricultural practices, operations or commodities.

2. SCOPE, USE AND DEFINITIONS:-

2.1 SCOPE This code of practice covers general hygienic practices for the primary production and packing of betel leaves cultivated for human consumption in order to produce a safe and wholesome product: particularly for those intended to be consumed raw. It concentrates on microbial hazards and addresses physical and chemical hazards only in so far as these relate to GAPs and GHPs.

2.2 USE This code focuses upon hygienic issues that are specific to the primary production and packing of betel leaves.

2.3 DEFINITIONS General expressions are included in the General Principles of Food Hygiene. For the purpose of this code, the following terms have the definition stated:

Agricultural inputs - any incoming material (e.g. seeds, fertilizers, water, agricultural chemicals, plant support, etc.) used for the primary production of betel leaves.

Worker - any person that undertakes one or more of the following: cultivation, harvesting and packing of betel leaves.

Antimicrobial agents - any substance of natural, synthetic or semi-synthetic origin which at low concentrations kills or inhibits the growth of microorganisms but causes little or no host damage.

Biological control - the use of competing biological (such as insects, microorganisms and/or microbial metabolites) for the control of mites, pests, plant pathogens and spoilage organisms.

Composting - a managed process in which organic materials are digested aerobically or anaerobically by microbial action.

Cultivation- any agricultural action or practice used by growers to allow and improve the growing conditions of betel leaves grown in the field (with or without cover) or in protected facilities (shed net, greenhouses and poly houses etc.).

Farm - any premise in which betel leaves are grown and harvested and the surroundings under the control of the same management.

Grower - the person responsible for the management of the primary production of betel leaves.

Harvester - the person responsible for the management of the harvesting of betel leaves.

Hazard – a biological, chemical or physical agent in, or condition of, food with the potential to cause an adverse health effect.

Hazardous material - any compound which, at specific levels, has the potential to cause adverse health effects.

Manure - Animal excrement which may be mixed with litter or other material, and which may be fermented or otherwise treated.

Microorganisms -include yeasts, moulds, bacteria, viruses and parasites. When used as an adjective, the term "microbial" is used.

Packer - the person responsible for the management of post-harvest processing and packing of betel leaves.

Packing -the action of putting betel leaves in a package. This may take place in APEDA recognized pack houses.

Primary production - those steps involved in the growing and harvesting of betel leaves such as planting, irrigation, application of fertilizers, application of agricultural chemicals, etc.

Clean water - water that does not compromise food safety in the circumstances of its use.

Potable water - water which meets the quality standards of drinking water such as described in the WHO Guidelines for Drinking Water Quality.

3. PRIMARY PRODUCTION Betel leaves are grown and harvested under sub tropical climatic conditions, using various agricultural inputs like organic fertilizer, farm yard manure etc., Biological, chemical and physical hazards may therefore vary significantly from one type of production to another.

3.2 HYGIENIC PRIMARY PRODUCTION OF BETEL LEAVES

3.2.1 Agricultural input requirements Agricultural inputs should not contain microbial or chemical contaminants to avoid the further multiplication of micro organism like *Salmonella* spp. E. Coli etc.

3.2.1.1 Water for primary production

- Growers should identify the sources of water used on the farm (municipality, re-used irrigation water, well, open canal, reservoir, rivers, lakes, farm ponds etc.). They should assess its microbial and chemical quality, and its suitability for intended use, and identify corrective actions to prevent or minimize contamination (e.g. from livestock, sewage treatment, human habitation).

- Where necessary, growers should have the water they use tested for microbial and chemical contaminants. The frequency of testing will depend on the water source and the risks of environmental contamination including intermittent or temporary contamination (e.g. heavy rain, flooding, etc.).

3.2.1.1.1 Water for irrigation and harvesting Water used for agricultural purposes should be of suitable quality for its intended use.

3.2.1.1.2 Water for fertilizers, pest control and other agricultural chemicals Water used for the application of water-soluble fertilizers and agricultural chemicals in the field should not contain microbial contaminants at levels that may adversely affect the safety of fresh fruits and vegetables.

3.2.1.2 Manure and other natural fertilizers The use of manure and other natural fertilizers in the production of betel leaves should be managed to limit the potential for microbial, chemical and physical contamination.

3.2.1.3 Soil Soils should be evaluated for hazards. If the evaluation concludes that such hazards are at levels that may compromise the safety of crops, control measures should be implemented to reduce hazards to acceptable levels. If this cannot be achieved by available control measures, growers should not use these soils for primary production.

3.2.2 Facilities associated with growing and harvesting under control condition

For operations where betel leaves are grown under controlled conditions (greenhouses, shed net and poly houses etc.) suitable premises should be used.

3.2.2.1 Location, design and layout

- Premises and structures should be located, designed and constructed to avoid contaminating betel leaves and harboring pests such as insects, rodents and birds.
- Where appropriate, the internal design and layout should permit compliance with good hygienic practices for the primary production of fresh betel leaves, including protection against cross-contamination between and during operations. Each establishment should be evaluated individually in order to identify specific hygienic requirements for each product.

3.2.2.2 Water supply Where appropriate, an adequate supply of potable or clean water with appropriate facilities for its storage and distribution should be available in primary production facilities. Non-potable water should have a separate system. Non-potable water systems should be identified and should not connect with, or allow reflux into potable water systems.

- Avoid contaminating potable and clean water supplies by exposure to agricultural inputs used for growing fresh produce.
- Clean and disinfect potable and clean water storage facilities on a regular basis.
- Control the quality of the water supply.

3.2.2.3 Drainage and waste disposal Adequate drainage and waste disposal systems and facilities should be provided. These systems should be designed and constructed so that the potential for contamination of betel leaves or the potable water supply is avoided.

3.2.3 Personnel health, hygiene and sanitary facilities Hygiene and health requirements should be followed to ensure that personnel who come directly into contact with betel leaves during or after harvesting are not likely to contaminate them. Visitors should, where appropriate, wear protective clothing and adhere to the other personal hygiene provisions in this section.

3.2.3.1 Personnel hygiene and sanitary facilities

Hygienic and sanitary facilities should be available to ensure that an appropriate degree of personal hygiene can be maintained. As far as possible, such facilities should:

- Be located in close proximity to the fields and pack houses, and in sufficient number to accommodate personnel.
- Be of appropriate design to ensure hygienic removal of wastes and avoid contamination.
- Have adequate means of hygienically washing and drying hands.
- Be maintained under sanitary conditions and good repair.

3.2.3.2 Health status People known, or suspected, to be suffering from, or to be a carrier of a disease or illness likely to be transmitted should not be allowed to enter the handling area if there is a likelihood of their contaminating. Any person so affected should immediately report illness or symptoms of illness to the management.

3.2.3.3 Personal cleanliness Workers who have direct contact should maintain a high degree of personal cleanliness and, where appropriate, wear suitable protective clothing and footwear. Cuts and wounds should be covered by suitable waterproof dressings when personnel are permitted to continue working. Personnel should wash their hands when handling betel leaves or other material that comes in contact with them. Personnel should wash their hands before starting work involving the handling, each time they return to handling areas after a break, immediately after using the toilet or after handling any contaminated material where this could result in contamination.

3.2.3.4 Personal behaviour Workers should refrain from behaviour which could result in the contamination of food, for example: smoking, spitting, chewing gum or eating, or sneezing or coughing over unprotected betel leaves.

3.2.4 Equipment associated with growing and harvesting

As required, growers and harvesters should follow the technical specifications recommended by the equipment manufacturers for their proper usage and maintenance. Growers and harvesters should adopt the following sanitary practices:

- Equipment and containers coming into contact betel leaves should be made of materials that are non-toxic.
- Containers that can no longer be kept in a hygienic condition should be discarded.

3.3 Handling, Storage and Transport

3.3.1 Prevention of cross-contamination During the primary production and post-harvest activities, effective measures should be taken to prevent cross-contamination of betel leaves from agricultural inputs or personnel who come directly or indirectly into contact with betel leaves.

- Equipment and containers previously used for potentially hazardous materials (e.g. garbage, manure, etc.) should not be used for holding betel leaves or have contact with packaging material that is used for betel leaves without adequate cleaning and disinfecting.
- Care must be taken when packing betel leaves in the field to avoid contaminating containers or bins by exposure to, manure or animal/human faces.

3.3.2 Storage and transport from the field to the packing facility Betel leaves should be stored and transported under conditions which will minimize the potential for microbial, chemical or physical contamination. The following practices should be adopted:

- Storage facilities and vehicles for transporting the harvested crops should be built in a manner to minimize damage to betel leaves and to avoid access by pests. They should be made of non-toxic materials that permit easy and thorough cleaning.

3.4 CLEANING, MAINTENANCE AND SANITATION Premises and harvesting equipment should be kept in an appropriate state of repair and condition to facilitate cleaning and disinfection. Equipment should function as intended to prevent contamination of betel leaves.

DECLARATION

I Mr./Ms., (Designation) of M/s (Name of the company/firm) Registered with APEDA with RCMC No....., declare that I have procured the raw material from the registered farm where Package of practices for betel leaves as given in Appendix-1 and Good Hygiene Practices as given in Appendix 2 of Procedure for Export of Betel Leaves have been followed in the field and during transit, sorting, grading and storage.

Place:
Date:

Signature of
Director/Managing partner/Proprietor

Format of Farm Registration

1	Name and address of the Farmer/Grower	First Name & Address of the farmer
	Taluka	
	District	
	State	
	Phone. No. with STD code	
	E-mail address	
2	Plot Registration No.	
3	Address of the Plot.	
	Survey no. / Gat no.	
	Taluka	
	District	
	State	
4	Total area of the plot, Map of the Plot (please indicate all sides of farm crop grown) Landmark, if any.	
5	Whether Plot is certified for Good Agriculture Practices (GAP) if so attach copy of valid certificate.	
	GAP Certificate No.	
	Date of issue and validity for GAP certificate	
6	Whether any Rapid Alert Notice issued by EU	
7	Date of Planting	
8	Condition of the crop relating to the pest, diseases and overall sanitation of farm	
9	Any advice given to the farmer by State Govt./Exporter/Packhouse	
10	Recommendation of the Inspecting Authority (Whether plot is fit for registration /renewal of registration)	
11	Date of Inspection	

It is certified that the above information is correct and true to the best of my knowledge.

Signature of Farmer/Grower

Authorized Signatory

Name of Farmer/Grower

Deptt. of Horticulture/Agriculture

Place:

Name:

Date:

Format of Health Certificate for exports of Betel Leaves from India to EU

COUNTRY

Health certificate to the EU

Part I: Details of dispatched consignment	I.1 Consignor				I.2. Certificate reference number		I.2.a
	Name				I.3. Central Competent Authority: APEDA		
	Address				I.4. Local Competent authority: Authorized person of APEDA approved laboratory		
	Country						
	Tel.						
	I.5 Consignee				I.6		
	Name						
	Address						
Country							
Tel.							
I.7 Country of Origin		ISO code	I.8 Region Of origin	Code	I.9 Country of destination	ISO code	I.10.
I.11. Place of origin				I.12 .			
Name							
Address							
I.13. Place of loading				I.14. Date of departure		Time of departure	
Address							
I. 15. Means of transport				I.16. Entry DPE in the EU			
Aeroplane <input type="checkbox"/> Ship <input type="checkbox"/> Railway Wagon <input type="checkbox"/>							
Road Vehicle <input type="checkbox"/> Other <input type="checkbox"/>				I.17. No. (s) of CITES			
Identification: Document :							
I.18. Description of commodity					I.19. Commodity code (HS code)		
							I.20. Quantity

I.21.	I.22. Number of packages				
I.23. Seal/Container No.	I.24.				
<p>I.25. Commodities certified as:</p> <p>Human consumption <input type="checkbox"/></p>					
I.26.	I.27. For import or admission into the EU <input type="checkbox"/>				
<p>I.28. Identification of the commodity</p> <table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; border: none;">Product name</td> <td style="width: 25%; border: none;">Type of packaging</td> <td style="width: 25%; border: none;">Number of packages</td> <td style="width: 25%; border: none;">Net weight</td> </tr> </table>		Product name	Type of packaging	Number of packages	Net weight
Product name	Type of packaging	Number of packages	Net weight		

COUNTRY:

Part II: Certification	II. Health information	II.a. Certificate reference number	II.B.						
	II.1. Health attestation								
<p>I, the undersigned authorized representative of the competent authority, declare that I am aware of the relevant provisions of Regulations (EC) No. 852/2004 and (EC) No 882/2004, and hereby certify that:</p> <p>II.1.1. The food of the consignment described under Part I has been produced under conditions which comply with Regulation (EC) No. 852/2004;</p> <p>II.1.2. From this consignment, sampling and analysis were carried out in accordance with Article 4 of C Implementing Regulation (EU) 2017/186 on..... (date), subjected to microbiological laboratory analysis on..... (date) in the (name of laboratory).</p> <p>The details of sampling, methods of analysis used and all results are attached, that show absence of <i>Salmonella</i> in 25g.</p> <p>Notes</p> <p>This health certificate is valid during 4 months from the date of issue</p> <p>Part I: BOX I.19: Use the appropriate Harmonized Systems (HS) code of the World Customs Organization: 14049000 for Betel leaves (<i>Piper betle</i> L.)</p>									
<p>Authorized representative of the competent authority</p> <table><tr><td>Name (in capital letters):</td><td>Qualification and title:</td></tr><tr><td>Date:</td><td>Signature:</td></tr><tr><td>Stamp:</td><td></td></tr></table>				Name (in capital letters):	Qualification and title:	Date:	Signature:	Stamp:	
Name (in capital letters):	Qualification and title:								
Date:	Signature:								
Stamp:									

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