TEA & HERBAL INFUSIONS EUROPE

Formerly: European Tea Committee (ETC) and European Herbal Infusions Association (EHIA)

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Compendium of Guidelines for Tea (*Camellia sinensis*)

(Former ETC Document)

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INTRODUCTION

The former European Tea Committee (ETC), established in 1960, represented the European tea industry and, in January 2015, together with the European Herbal Infusions Association (EHIA) formed the new association, Tea & Herbal Infusions Europe (THIE).

THIE gathers a professional knowledge on all topics of tea (Camellia sinensis) and extracts thereof used as foodstuffs.

THIE cooperates with competent EU-authorities and other national and international authorities for the interest and benefit of the product group of tea, respectively its extracts.

Tea is a part of the European tradition and culture. Its popularity reflects increasing consumer appreciation for the wide range of natural and refreshing tastes it offers.

Legal provisions for tea and tea extracts thereof are only partly harmonised and may differ considerable in the Member States. To promote a common understanding of what tea is, to promote free trade in the European market and to improve consumers' knowledge about their products the tea industry has completed the present Compendium.

The Compendium reflects the practice of the industry in the EU Member States and links it to the relevant legal EU provisions and standards in force.

Products are consumed not only as traditional brewed tea, but increasingly also as preparations from tea and ingredients of other foodstuffs, e.g. ice tea, instant preparations or concentrates from tea infusions.

THIE's intention in establishing this Compendium of Guidelines is:

- to establish a Compendium of Guidelines for tea, flavoured tea and tea extracts
- to compile all relevant legal provisions in the EU and standards in force
- to establish a scientific basis for tea, their extracts and preparations in the EU
- to promote and set harmonised Quality Standards for different product categories in the EU, falling into the scope of THIE's responsibility
- to provide a basis for free trade of the products in the EU market
- to promote a high quality policy for the relevant products
- to acknowledge the industry's responsibility for food safety
- to provide a comprehensive Compendium of Guidelines for the industry, authorities and other interested parties
- to improve transparency and to provide clear consumer information.

The Compendium of Guidelines will be updated regularly according to legal and technical developments.

PART I: Tea, flavoured tea and tea or flavoured tea with other food ingredients

Category	Tea	Flavoured tea	Tea or flavoured tea with other food ingredients
1. General properties of the category			
1.1 Definition	Tea is derived solely and exclusively from the tender shoots of varieties of the species Camellia sinensis (L.) O. Kuntze and produced by acceptable processes for making a tea infusion suitable for consumption as a beverage.	Flavoured tea is tea to which flavourings and/or food ingredients with flavouring properties are added in order to lend a specific flavour.	Tea or flavoured tea with other food ingredients which do not fall under the definition of a flavouring or food ingredients with flavouring properties.
1.2 Ingredients	Tea as defined previously.	Flavoured tea consists of: ▪ tea as a basis ▪ flavourings (e.g. liquid flavours, dry flavours). Flavourings are not used for the purpose of imitating or intensifying the fragrance and/or taste of tea ▪ food ingredients with flavouring properties (e.g. parts of plants described in the THIE Inventory List in its current version, www.thie-online.eu, juice, juice concentrate). Furthermore there are flavouring processes for speciality teas such as ▪ smoking (Lapsang Souchong) ▪ steaming (Milky Oolong).	Tea and flavoured tea with other food ingredients can consist of: ▪ tea as a basis ▪ flavourings (e.g. liquid flavours, dry flavours). Flavourings are not used for the purpose of imitating or intensifying the fragrance and/or taste of tea ▪ food ingredients with flavouring properties (e.g. parts of plants described in the THIE Inventory List in its current version, www.thie-online.eu, juice, juice concentrate). ▪ other food ingredients (e.g. vitamins, minerals, rice). Legal requirements with regard to “carry-over” apply.
1.3 Processing	1. Black tea is produced by acceptable processes, most notably withering, rolling/leaf maceration, fermentation/aeration and drying (see ISO 3720:2011). 2. Oolong tea is produced by acceptable processes, most notably withering, rolling/leaf maceration, semi-fermentation/aeration and drying. 3. Green tea is produced by acceptable processes, most notably enzyme inactivation and commonly rolling or comminution, followed by drying (see ISO 11287:2011). 4. There are further types of tea made from Camellia sinensis where other forms of processing/special treatments may be used, namely ▪ non-fermentation/aeration (e.g. white tea) ▪ part-fermentation/aeration (e.g. yellow tea)		

Category	Tea	Flavoured tea	Tea or flavoured tea with other food ingredients
	▪ post-fermentation/aeration (e.g. Pu-Erh tea) and drying. See **Annex 1** for examples of major types of teas and corresponding production steps. The description of white tea is given in **Annex 2**.		
1.4 General characteristics of the product	Tea is a low moisture ambient-stable foodstuff, therefore microbiologically stable under normal storage conditions. These may be defined as max. 25° C, max. 65% RH and light protected. 1. Tea is virtually free from any vegetative forms of moulds and should be free from any foreign material so far as is reasonably practicable. 2. The content of acid-insoluble ash in the dry matter of tea provides information as to whether or not it may be contaminated or adulterated with mineral components such as soil or sand. According to ISO Standard 3720 the acid insoluble ash should not exceed 1%. 3. As per ISO 3720 no moisture (loss in mass) limit is specified for tea as received from the country of origin. However, as a general rule a moisture level of 8 % should not be exceeded. Where moisture levels are determined they should be based on ISO 1573. 4. Caffeine is naturally present in tea. Tea contains no less than 1.5% in the dry matter. 5. Water-soluble tea matter is typically no lower than 32%. Notable exceptions to this are Turkish and Russian teas which contain at least 26% in the dry matter.	Flavoured tea is a low moisture ambient-stable foodstuff, therefore microbiologically stable under normal storage conditions. These may be defined as max. 25° C, max. 65% RH and light protected. 1. Flavoured tea is virtually free from any vegetative forms of moulds and should be free from any foreign material so far as is reasonably practicable. 2. The content of acid-insoluble ash in the dry matter of tea provides information as to whether or not it may be contaminated or adulterated with mineral components such as soil or sand. According to ISO Standard 3720 the acid insoluble ash should not exceed 1%. 3. The moisture (loss in mass) level of flavoured tea depends on the flavour used and the amount of flavour.	Tea or flavoured tea with other food ingredients is a low moisture ambient-stable foodstuff, therefore microbiologically stable under normal storage conditions. These may be defined as max. 25° C, max. 65% RH and light protected. 1. Tea or flavoured tea with other food ingredients is virtually free from any vegetative forms of moulds and should be free from any foreign material so far as is reasonably practicable. 2. The moisture (loss in mass) level of tea or flavoured tea with other food ingredients depends on the flavour and other food ingredients used and the amount of flavour and other food ingredients.

Category	Tea	Flavoured tea	Tea or flavoured tea with other food ingredients
1.5 Name and presentation	The denomination *Tea* or *Black tea* is used for tea which has been processed as specified under **1.3 Processing (1)**. The denomination *Oolong tea* is used for tea which has been processed as specified under **1.3 Processing (2)**. The denomination *Green tea* is used for tea which has been processed as specified under **1.3 Processing (3)** The denomination *White tea* is used for tea which has been processed as specified under **1.3 Processing (4)** and **Annex 2**. The denomination *Yellow tea* is used for tea which has been processed as specified under **1.3 Processing (4)**. The denomination *Pu-Erh tea* is used for tea which has been processed as specified under **1.3 Processing (4)**. The denomination of the product may be supplemented by commonly used descriptions in order to more clearly define the character (e.g. FOP). See **Annex 3** for examples of abbreviations for the different leaf grade categories. Geographical indications are only used if the tea originates exclusively from a particular district of origin. An indication of a particular country or a region which does not grow its own tea cannot be considered as an indication of origin, e.g. *East Frisian blend* or *English breakfast*. If the term "blend" is mentioned in the denomination it indicates that the tea comes from different origins. A geographical indication is only given, if the proportion of tea from the mentioned district of origin accounts for more than half of the total amount and if it is determining for the character of the tea blend in question, for example *Assam tea blend*.	In case a product as described in the category "Tea" is flavoured, the denomination has to indicate the flavouring and the flavour, for example *Flavoured Tea – Wild Cherry* The denomination of the product may be supplemented by commonly used descriptions in order to more clearly define the character (e.g. FOP). See **Annex 3** for examples of abbreviations for the different leaf grade categories. If the term "blend" is mentioned in the denomination it indicates that the tea comes from different origins. A geographical indication is only given, if the proportion of tea from the mentioned district of origin accounts for more than half of the total amount and if it is determining for the character of the tea blend in question, for example *Flavoured Assam Tea Blend – Wild Cherry*. Pictures or graphics match the product. This means that e.g. pictorials can be placed on the package to represent the appropriate flavours, if they are properly labelled in the list of ingredients. In some Member States further national provisions apply.	For tea or flavoured tea with other food ingredients a descriptive denomination is used, for example *Tea Flavoured Wild Cherry with Vitamins A, C, E.* Pictures or graphics match the product. This means that e.g. pictorials can be placed on the package to represent the appropriate flavours, if they are properly labelled in the list of ingredients. In some Member States further national provisions apply.
1.6 Infusion / sensory evaluation	ISO Standard 3103	ISO Standard 3103	ISO Standard 3103

Category	Tea	Flavoured tea	Tea or flavoured tea with other food ingredients
1.7 Decaffeinated	There are processes in place to reduce the natural caffeine content in tea. There is no harmonised legislation in place for the maximum level caffeine content remaining in the decaffeinated product. Without prejudice to national legal limits (**Annex 4**) a maximum level of 0.4 % in the dry matter applies. Decaffeination is indicated in the denomination of the product by use of the term "decaffeinated" or similar variants thereof.	There are processes in place to reduce the natural caffeine content in tea. There is no harmonised legislation in place for the maximum level caffeine content remaining in the decaffeinated product. Without prejudice to national legal limits (**Annex 4**) a maximum level of 0.4 % in the dry matter applies. Decaffeination is indicated in the denomination of the product by use of the term "decaffeinated" or similar variants thereof.	There are processes in place to reduce the natural caffeine content in tea. There is no harmonised legislation in place for the maximum level caffeine content remaining in the decaffeinated product. Without prejudice to national legal limits (**Annex 4**) a maximum level of 0.4 % in the dry matter applies. Decaffeination is indicated in the denomination of the product by use of the term "decaffeinated" or similar variants thereof.
2. General requirements for all categories in EU legislation based on Regulation (EC) No 178/2002 (in its current version) National provisions apply in some Member States for certain metals.			
2.1 Labelling in general	Regulation (EU) No 1169/2011 in its current version	Regulation (EU) No 1169/2011 in its current version	Regulation (EU) No 1169/2011 in its current version
2.1a Protected designation of origin (PDO) or protected geographical indication (PGI)	Council Regulation (EU) No 1151/2012 in its current version, especially Commission Implementing Regulation (EU) No 449/2011 on the registration of Longjing Cha (PDO) and Commission Implementing Regulation (EU) No 1050/2011 on the registration of Darjeeling (PGI) in their current versions.		
2.2 Residues and contaminants		For flavouring substances maximum limits for pesticides, metals and contaminants apply to the raw materials if there is no legal maximum limit specified in the according EU Regulations for the extract as such or for the products ready to use respectively as sold. Processing factors must be considered.	For flavouring substances maximum limits for pesticides, metals and contaminants apply to the raw materials if there is no legal maximum limit specified in the according EU Regulations for the extract as such or for the products ready to use respectively as sold. Processing factors must be considered.
2.2a Pesticide residues	Regulation (EC) No 396/2005 in its current version	Regulation (EC) No 396/2005 in its current version	Regulation (EC) No 396/2005 in its current version
2.2b Metals	Regulations (EC) No 396/2005 in its current version	Regulations (EC) No 396/2005 and (EC) No 1881/2006 in their current versions	Regulations (EC) No 396/2005 and (EC) No 1881/2006 in their current versions
2.2c Mycotoxins		Regulation (EC) No 1881/2006 in its current version	Regulation (EC) No 1881/2006 in its current version
2.2d Contaminants others than		Regulation (EC) No 1881/2006 in its current version	Regulation (EC) No 1881/2006 in its current version

Category	Tea	Flavoured tea	Tea or flavoured tea with other food ingredients
metals and mycotoxins			
2.3 Radioactivity	Regulations (EC) No 1609/2000 and (EU) No 2016/6 in their current versions	Regulations (EC) No 1609/2000 and (EU) No 2016/6 in their current versions	Regulations (EC) No 1609/2000 and (EU) No 2016/6 in their current versions
2.4 Irradiation		Directives 1999/2/EC and 1999/3/EC in their current versions	Directives 1999/2/EC and 1999/3/EC in their current versions
2.5 Hygiene	Regulation (EC) No 852/2004 in its current version	Regulation (EC) No 852/2004 in its current version	Regulation (EC) No 852/2004 in its current version
2.6 GMO	Regulations (EC) No 1829/2003 and No 1830/2003 in their current versions	Regulations (EC) No 1829/2003 and No 1830/2003 in their current versions	Regulations (EC) No 1829/2003 and No 1830/2003 in their current versions
2.7 Allergens	Regulation (EU) No 1169/2011 in its current version	Regulation (EU) No 1169/2011 in its current version	Regulation (EU) No 1169/2011 in its current version
3. Specific requirements for certain categories in EU legislation			
3.1 Other food ingredients			Regulation (EC) No 178/2002 in its current version
3.2 Flavourings		Regulation (EC) No 1334/2008 in its current version on flavourings as such	Regulation (EC) No 1334/2008 in its current version on flavourings as such
3.3 Vitamins and minerals			Regulation (EC) No 1925/2006 in its current version
3.4 Food additives		Regulation (EC) No 1333/2008 in its current version	Regulation (EC) No 1333/2008 in its current version
4. THIE requirements for all categories			
4.1 Hygiene	THIE HACCP Guidance notes for tea producers and processors in the country of origin in its current version, **Annex 5**.	THIE HACCP Guidance notes for tea producers and processors in the country of origin in its current version, **Annex 5**.	THIE HACCP Guidance notes for tea producers and processors in the country of origin in its current version, **Annex 5.**
4.2 Microbiology	THIE´s Recommended Microbiological Guideline for Tea (Camellia sinensis), **Annex 10.**	For the ingredient tea THIE´s Recommended Microbiological Guideline for Tea (Camellia sinensis) applies, **Annex 10.** For special, flavoured teas, like Jasmine Tea, Milky Oolong or Lapsang Souchong a modified processing takes place, which is not covered by Part I, 1.3 Processing; therefore, the Microbiological Guideline is not applicable in these cases.	For the ingredient tea THIE´s Recommended Microbiological Guideline for Tea (Camellia sinensis) applies, **Annex 10.**

PART II: Extracts from Tea, Flavoured Extracts from Tea and Preparations from Foodstuffs with Extracts from Tea

Category	Extracts from tea	Flavoured extracts from tea	Preparations from foodstuffs with extracts from tea
1. General properties of the category			
1.1 Definition	Extracts from tea are aqueous extracts from which water is removed to a greater or lesser extent.	Flavoured extracts from tea are aqueous extracts from which water is removed to a greater or lesser extent and to which flavourings and/or food ingredients with flavouring properties will be added in order to lend a specific flavour.	Preparations from foodstuffs with extracts from tea and/or flavoured extracts from tea are foodstuffs which are used for the production of beverages which are characterised by the use of extracts from tea. There are different kinds of preparations, e.g.: - final products which have to be prepared by the consumer, like instant preparations, ready mixes, dry and liquid concentrates, tablets, granules - ingredients which are used for final products like ready to drink products.
1.2 Ingredients	In the production of extracts from tea it is customary to use: - natural fragrance and/or flavouring substances which are separated or recovered during production (recovery flavour) - maltodextrin a) to prevent stickiness and maintain flowability of dried tea extracts b) to prevent lumping of liquid tea extracts c) to improve and maintain homogeneity of liquid tea extracts - up to 10g sodium hydroxide or potassium hydroxide per 100g of dry mass of tea extract, independent of the substances necessary for neutralization (acetic acid, lactic acid, tartaric acid, citric acid or carbonic acid) in order to improve solubility in cold water. - food additives pursuant to the Regulation (EC) No 1333/2008 in its current version.	Flavoured extracts from tea consist of: - Extracts from Tea - flavourings. However, these substances are not used for the purpose of imitating or intensifying the fragrance and/or taste of tea - food ingredients with flavouring properties (e.g. juice, juice concentrate).	Preparations from foodstuffs with extracts from tea can consist of: - Extracts from tea/Flavoured extracts from tea - flavourings - foodstuffs (e.g. juice, juice concentrate, water, milk powder, maltodextrin, sugar) - vitamins, minerals - food additives pursuant to the Regulation (EC) No 1333/2008 in its current version.
1.3 Processing	A description of the general principles of tea extracts manufacture is given in **Annex 7**.	A description of the general principles of tea extracts manufacture is given in **Annex 7.**	Depends on kind of product.

Category	Extracts from tea	Flavoured extracts from tea	Preparations from foodstuffs with extracts from tea
1.4 General characteristics of the product	Extracts from tea are available in liquid and powdered forms. Such products are virtually free from any vegetative forms of moulds and should be free from any foreign material so far as is reasonably practicable. According to ISO 6079, extracts in powdered form - should show a loss in mass not greater than 6 % and - the total ash content should not be greater than 20% in the dry matter. The total ash content for liquid extracts should not be greater than 20% in the dry matter.	Flavoured extracts from tea are available in liquid and powdered forms. Such products are virtually free from any vegetative forms of moulds and should be free from any foreign material so far as is reasonably practicable. Extracts in powdered form, show a maximum mass loss of 8 %. The total ash content for both powdered and liquid extracts should not be greater than 20% in the dry matter.	Preparations from foodstuffs with extracts from tea and/or flavoured extracts from tea are available in liquid and powdered forms. Ready to consume products using such preparations contain no less than 0.12 g dry mass of extracts from tea in 100 ml. In case the drink has to be prepared by final consumers, it refers to the drink made according to the instruction for the preparation. The tea extract has to be in accordance with ISO 6079. The ready-to-drink product has a minimum caffeine content of 40mg/l. Such products are virtually free of vegetative forms of mould and foreign matters.
1.5 Name and presentation	For tea extracts (as produced in accordance with these guidelines) the general heading of “Tea Extract” is commonly used. In the case of different types of tea being used (see Part I, Category 1.5), this may typically include the following more specific denominations, e.g.: - Black Tea Extract/Extract from Black Tea - Green Tea Extract/Extract from Green Tea Pictures or graphics match the product. Improved solubility in cold water can be indicated by the additional use of the term “soluble in cold water”. If maltodextrin is used according to 1.2. of these Guidelines, the amount has to be indicated.	For flavoured tea extracts (as produced in accordance with these guidelines) the general heading of “Flavoured Tea Extract” is commonly used in conjunction with the flavour added, e.g. “Flavoured Tea Extract – Wild Cherry”. In the case of different types of tea being used (see Part I, Category 1.5), this may typically include the following more specific denominations, e.g.: - Flavoured Black Tea Extract – Wild Cherry/Flavoured Extract from Black Tea – Wild Cherry - Flavoured Green Tea Extract – Wild Cherry/Flavoured Extract from Green Tea – Wild Cherry Pictures or graphics match the product. This means that e.g. pictorials can be placed on the package to represent the appropriate flavours, if they are properly labelled in the list of ingredients. In some Member States further national provisions apply. Improved solubility in cold water can be indicated by the additional use of the term “soluble in cold water”. If maltodextrin is used according to 1.2. of these Guidelines, the amount has to be indicated.	Preparations from foodstuffs with extracts from tea and/or flavoured extracts from tea which are final products and have to be prepared by the consumer are denominated preparation for tea drinks or e.g. instant tea preparation, tea concentrate. Products ready to drink containing preparations according to 1.1 indent 2 and containing a minimum of tea extract of 0.12 g/100ml and a minimum content of caffeine of 40 mg/l according to 1.4, are denominated e.g. tea drink, ice tea. An indication of the flavour is given. Pictures or graphics match the product. This means that e.g. pictorials can be placed on the package to represent the appropriate flavours, if they are properly labelled in the list of ingredients. In some Member States further national provisions apply. Improved solubility in cold water can be indicated by the additional use of the term soluble in cold water.

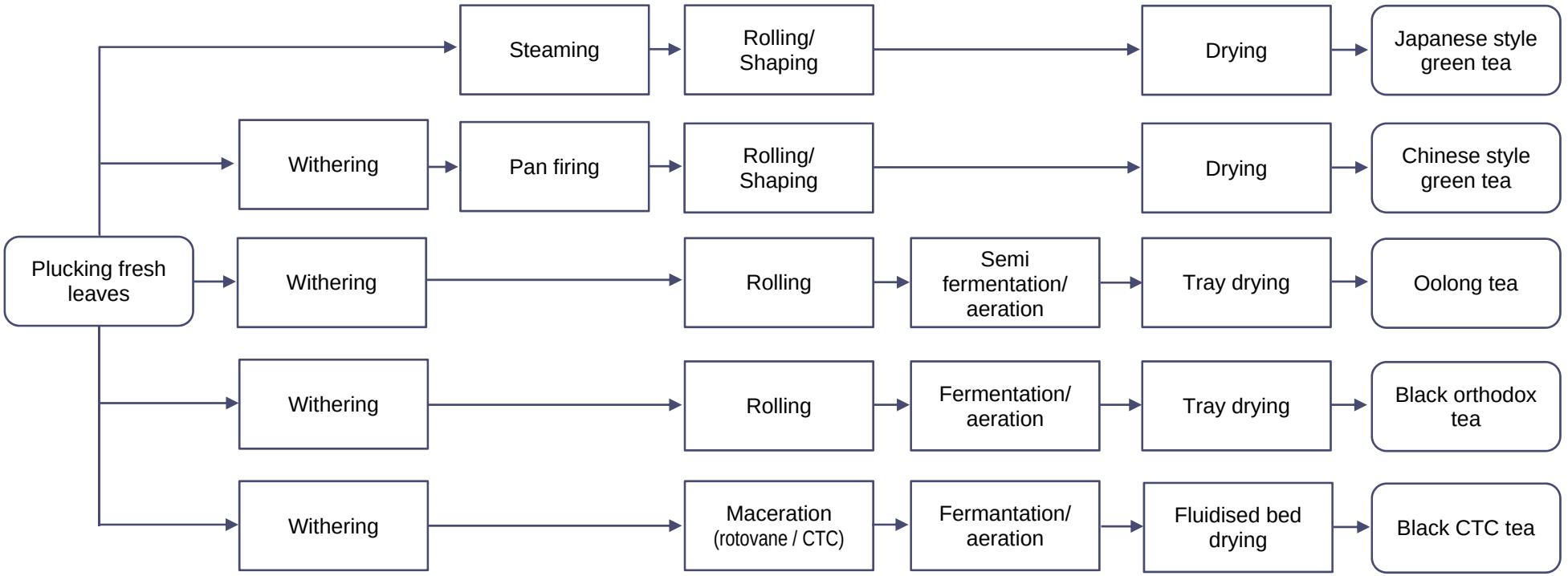
Category	Extracts from tea	Flavoured extracts from tea	Preparations from foodstuffs with extracts from tea
1.6 Infusion / sensory evaluation	Standard Procedure for Preparation of Tea Extract Liquors for Sensory Evaluation **Annex 8.**	Standard Procedure for Preparation of Tea Extract Liquors for Sensory Evaluation **Annex 8.**	No standard procedure available.
1.7 Decaffeinated	There is no harmonised legislation in place for the maximum level caffeine content remaining in the decaffeinated product. Without prejudice to national legal limits (**Annex 9**) a maximum level of 1.2 % in the dry matter applies. Decaffeination is indicated in the denomination of the product by use of the term “decaffeinated” or similar variants thereof.	There is no harmonised legislation in place for the maximum level caffeine content remaining in the decaffeinated product. Without prejudice to national legal limits (**Annex 9**) a maximum level of 1.2 % in the dry matter applies. Decaffeination is indicated in the denomination of the product by use of the term “decaffeinated” or similar variants thereof.	In case decaffeinated tea extract is used, decaffeination is indicated in the denomination of the product by use of the term “decaffeinated” or similar variants thereof.
2. General requirements for all categories in EU legislation based on Regulation (EC) No 178/2002 (in its current version) National provisions apply in some Member States for certain metals.			
2.1 Labelling in general	Regulation (EU) No 1169/2011 in its current version	Regulation (EU) No 1169/2011 in its current version	Regulation (EU) No 1169/2011 in its current version
2.1a Protected designation of origin (PDO) or protected geographical indication (PGI)	Regulation (EU) No 1151/2012 in its current version, esp. Commission Implementing Regulation (EU) No 449/2011 on the registration of Longjing Cha (PDO) in its current version and Commission Implementing Regulation (EU) No 1050/2011 on the registration of Darjeeling (PGI) in its current version. Commission Communication — Guidelines on the labelling of foodstuffs describe the use of protected designations of origin (PDOs) or protected geographical indications (PGIs) as ingredients (2010/C 341/03). With regard to labelling of extracts, the typical sensory properties of the original teas have to be maintained. This requires a case by case decision.	Regulation (EU) No 1151/2012 in its current version.	Regulation (EU) No 1151/2012 in its current version, esp. Commission Implementing Regulation (EU) No 449/2011 on the registration of Longjing Cha (PDO) in its current version and Commission Implementing Regulation (EU) No 1050/2011 on the registration of Darjeeling (PGI) in its current version. Commission Communication — Guidelines on the labelling of foodstuffs describe the use of protected designations of origin (PDOs) or protected geographical indications (PGIs) as ingredients (2010/C 341/03). This requires a case by case decision with regard to products containing tea extracts as ingredient.
2.2 Residues and contaminants	Processing factors according to Article 20 in connection with Annex VI to Regulation (EC) No 396/2005 (in its current version) must be considered.	The maximum limits for pesticides, metals and contaminants apply to the raw materials if there is no legal maximum limit specified in the according EU Regulations for the extract as such or for the products ready to use respectively as sold. Processing factors according to Article 20 in connection with Annex VI to Regulation (EC) No 396/2005 (in its current version) must be considered.	The maximum limits for pesticides, metals and contaminants apply to the raw materials if there is no legal maximum limit specified in the according EU Regulations for the extract as such or for the products ready to use respectively as sold. Processing factors according to Article 20 in connection with Annex VI to Regulation (EC) No 396/2005 (in its current version) must be considered.

Category	Extracts from tea	Flavoured extracts from tea	Preparations from foodstuffs with extracts from tea
2.2a Pesticide residues	Regulation (EC) No 396/2005 in its current version	Regulation (EC) No 396/2005 in its current version	Regulation (EC) No 396/2005 in its current version
2.2b Metals	Regulation (EC) No 396/2005 in its current version	Regulations (EC) No 396/2005 and (EC) No 1881/2006 in their current versions	Regulations (EC) No 396/2005 and (EC) No 1881/2006 in their current versions
2.2c Mycotoxins		Regulation (EC) No 1881/2006 in its current version	Regulation (EC) No 1881/2006 in its current version
2.2d Contaminants others than metals and mycotoxins		Regulation (EC) No 1881/2006 in its current version	Regulation (EC) No 1881/2006 in its current version
2.3 Radioactivity	Regulations (EC) No 1609/2000 and (EU) No 996/2012 in their current versions	Regulations (EC) No 1609/2000 and (EU) No 996/2012 in their current versions	Regulations (EC) No 1609/2000 and (EU) No 996/2012 in their current versions
2.4 Irradiation		Directives 1999/2/EC and 1999/3/EC in their current versions	Directives 1999/2/EC and 1999/3/EC in their current versions
2.5 Hygiene	Regulation (EC) No 852/2004 in its current version	Regulation (EC) No 852/2004 in its current version	Regulation (EC) No 852/2004 in its current version
2.6 GMO	Regulations (EC) No 1829/2003 and 1830/2003 in their current versions	Regulations (EC) No 1829/2003 and 1830/2003 in their current versions	Regulations (EC) No 1829/2003 and 1830/2003 in their current versions
2.7 Allergens	Regulation (EU) No 1169/2011 in its current version	Regulation (EU) No 1169/2011 in its current version	Regulation (EU) No 1169/2011 in its current version
3. Specific requirements for certain categories in EU legislation			
3.1 Other food ingredients			Regulation (EC) No 178/2002 in its current version
3.2 Flavourings		Regulation (EC) No 1334/2008 in its current version on flavourings as such	Regulation (EC) No 1334/2008 in its current version on flavourings as such
3.3 Vitamins and minerals			Regulation (EC) No 1925/2006 in its current version
3.4 Food additives		Regulation (EC) No 1333/2008 in its current version	Regulation (EC) No 1333/2008 in its current version

Category	Extracts from tea	Flavoured extracts from tea	Preparations from foodstuffs with extracts from tea
4. THIE requirements for all categories			
4.1 Hygiene	THIE HACCP Guidance notes for tea producers and processors in the country of origin in its current version, **Annex 5.**	THIE HACCP Guidance notes for tea producers and processors in the country of origin in its current version, **Annex 5**.	THIE HACCP Guidance notes for tea producers and processors in the country of origin in its current version, **Annex 5.**

Annex 1

Tea Processing – Examples of major types of tea and corresponding steps of production



(modified according to Y. Hilal and U. Engelhardt, Characterisation of white tea – Comparison to green and black tea, Journal of Consumer Protection and Food Safety 2 (2207): 414-421, 415)

Annex 2

Position Paper – White tea

In order for white tea to be so termed, it should be processed in accordance with the guidelines below, originally established in Fujian Province, China:

- Made from tender shoots of *Camellia sinensis*, gently plucked to minimize damage.
- Minimally processed, apart from the drying which occurs naturally.
- The liquor of white tea is usually very pale in colour and is mild tasting in cup.
- White tea can be made by any tea producing country providing manufacture conforms to the above harvesting and processing steps.
- Grades include:
  - Buds – e.g. silver needle, snow buds style from China and silver tip from Sri Lanka, e.g., whole long fine unopened buds delivering very light subtle liquor.
  - Whole leaf (e.g. Pai Mu Tan style) – Value depends on proportion of buds, leaf appearance as well as liquor quality and colour. Typically bud and up to 2 leaves.
  - Pekoe fannings grade – Made from the broken leaf of tea that has been manufactured by the white tea process.

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Annex 3

Examples of abbreviations for the different leaf grade categories

Leaf teas

FOP	Flowery Orange Pekoe
GFOP	Golden Flowery Orange Pekoe
TGFOP	Tippy Golden Flowery Orange Pekoe
OP	Orange Pekoe
P	Pekoe
FP	Flowery Pekoe

Broken teas

FBOP	Flowery Broken Orange Pekoe
GFBOP	Golden Flowery Broken Orange Pekoe
TGFBOP	Tippy Golden Flowery Broken Orange Pekoe
BOP	Broken Orange Pekoe
D	Dust
BP	Broken Pekoe
PF	Pekoe Fannings
PD	Pekoe Dust

Annex 4

Examples of national levels for caffeine in tea and decaffeinated tea

Country	Minimum content in tea	Maximum content in decaffeinated tea	Ruling/Regulation
Austria	1.5 % in dry mass	0.4 % in dry mass	Österreichisches Lebensmittelbuch, IV. Auflage, Codex-kapitel B 31, Tee und teeähnliche Erzeugnisse, veröffentlicht 19.01.2009
Belgium		0.1 %	Koninklijk besluit betreffende thee en thee-extracten, 28.04.1999
France		1 g per kg tea	Décret du 7 octobre 1932 pris pour l'application de la loi du 1er août 1905 sur la répression des fraudes dans la vente des marchandises et des falsifications des denrées alimentaires en ce qui concerne le café, la chicorée et le thé
Germany	1.5 % in dry mass	0.4 % in dry mass	Deutsches Lebensmittelbuch, Leitsätze für Tee und teeähnliche Erzeugnisse, Neufassung, bekanntgemacht 26.01.1999
Italy		0.1 %	Decreto Ministeriale, Disciplina della produzione e del commercia del thè deteinato, 12.12.1979
Slovakia		0.4 g per 100g of dry weight	Decree of the Agriculture Ministry of the Slovak Republic and the Health Ministry of the Slovak Republic, issuing the chapter of the Foodstuffs Code of the Slovak Republic that deals with flavouring products
Switzerland		0.1 %	Verordnung des EDI über alkoholfreie Getränke (insbesondere Tee, Kräutertee, Kaffee, Säfte, Sirupe, Limonaden) vom 23. November 2005

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Annex 5

HACCP GUIDANCE NOTES FOR EUROPEAN TEA PACKERS, TEA PRODUCERS AND PROCESSORS IN THE COUNTRY OF ORIGIN

(Former ETC Document)

CONTENTS

1. Introduction
2. Scope
3. Tea manufacture
4. Description of potential food safety hazards
5. Measures to be applied by the local tea primary producers to monitor and reduce/eliminate potential food safety hazards
6. Measures to be applied by the local tea processors to monitor and reduce/eliminate potential food safety hazards
7. Measures to be applied by the European tea packer to monitor and reduce/eliminate potential food safety hazards

References

Appendix 1 Primary production and processing of black tea

Appendix 2 Primary production and processing of green tea

Appendix 3 Primary production and processing of white tea

Appendix 4 Generic example of a HACCP plan for a tea blending operation (for illustrative purposes only)

1. INTRODUCTION

Tea, *Camellia sinensis*, has been imported into Europe for in excess of 200 years with few, if any, reported safety concerns and has consequently been deemed to be 'low' risk in terms of food safety.

Tea is an agricultural product that is predominantly grown, harvested and processed in developing countries. It is sold on the world market either by Public Auction or Private Treaty (either directly by the producer or via a broker or trader). It is generally impractical for the European Packer to exert any direct control over the tea manufacturing process or to directly control food safety issues addressed during the process.

Regulation (EC) No 852/2004 concerning the hygiene of foodstuffs places an obligation on food business operators to ensure that all stages of production, processing and distribution of food under their control satisfies the relevant hygiene requirements laid down in the Regulation.

The Regulation requires that food business operators put in place, implement and maintain a permanent procedure or procedures based on Hazard Analysis and Critical Control Point (HACCP) principles. This requirement will apply to tea processors carrying out any stage of production, processing and distribution of food **after** primary production and associated operations.

Procedures based on the HACCP principles should not initially apply to primary production of tea but food hazards present at the level of primary production and associated operations should be identified and adequately controlled to ensure the achievement of the objectives of the Regulation.

Tea imported into the EU is subject to the requirements laid down in this Regulation.

These guidance notes have therefore been produced by the European Tea Committee for use by its members to:

- facilitate a common approach to discharging their food safety responsibilities,
- assist in discussions with national authorities regarding compliance with Regulation (EC) No 852/2004 on the hygiene of foodstuffs in relation to manufactured tea, i.e. their primary raw material and, if appropriate,
- produce national guides or codes of practice.

National and European Regulations for tea are enforced without prejudice to the guidelines.

2. SCOPE

These guidance notes apply to green, black, white and oolong tea from the plant, *Camellia sinensis.* They apply to tea primary production and associated operations, tea processing in the country of origin and transport to the European Packer.

In this document the following definitions apply:

- *Primary production* encompasses the growing and harvesting of the tea but does not include any other steps which substantially alter the nature of the tea.
- *Associated operations* encompass the transport, storage and handling of teas at the place of production, provided that this does not substantially alter their nature, and the transport

operations to deliver teas, the nature of which has not been substantially altered, from the place of production to an establishment.

Processing means any action that substantially alters the tea, including heating and drying and covers all activity subsequent to primary production and associated operations.

Infusions prepared from other plants that are sometimes generically referred to as 'teas' are specifically excluded from the scope of this guide; these raw materials are the subject of specific guidance notes prepared by the European Herbal Infusions Association. Decaffeinated and instant teas are, for the purposes of this guide, defined as processed teas and are outside its scope.

3. TEA MANUFACTURE

Tea manufacture is essentially a batch process; the process steps relating to the primary production and processing of black, green and white tea are detailed in Appendices 1, 2 & 3.

4. DESCRIPTION OF POTENTIAL FOOD SAFETY HAZARDS

Tea is used for the preparation of a beverage by infusing the dry leaf in water; in most cases, boiling water is used but cold water can be used particularly when preparing 'iced tea'. Using the principles of the HACCP system each process step has been considered and as an illustrative example only, potential food safety hazards resulting from primary production and processing of tea identified; these are:

- Chemical contamination
- Foreign matter
- Microbiological contamination

HACCP principles should be applied by local processors to each specific processing operation separately in order to conduct a hazard analysis and to consider any measures to control identified hazards.

Chemical contamination

The critical limits for chemical contamination are those given in EU and national legislation 3, 4, 5 and 10. Where national legislation differs from EU legislation and provides for limits that are more stringent, these should take precedence regardless of whether these legislative limits apply to the producing country or the country of sale.

The absence of a legal limit does not preclude individual packers setting limits for additional contaminants in line with their company policies.

Chemical contamination can arise because of environmental pollution, inappropriate use of agrochemicals, sabotage, adulteration, lubricants from tea processing machinery, fumigant residues from the fumigation of containers and contamination during transport or storage.

No naturally occurring constituents of tea have been identified which are likely to present a safety risk requiring control measures.

- Environmental pollution may for example result in enhanced levels of heavy metals from a variety of sources, e.g. nearby industry, traffic on nearby roads.
  The available literature and in-house monitoring by European tea packers clearly

demonstrates that the incidence of high levels of heavy metal contamination is low with the levels found rarely exceeding the limit values and hence heavy metals present a minimal food safety risk.

- Agrochemicals may be present because of the use of non-approved chemicals or their use without adherence to Good Agricultural Practice (GAP).
  The monitoring of 'pesticide' residues by the trade shows that for most origins, values exceeding the current legal maximum residue levels (MRLs)3 are infrequent and at levels which do not compromise food safety. In some origins, residues exceeding the MRLs values are detected and in these instances the teas are not purchased as to do so would be illegal. As a result, the food safety risk from agrochemicals is considered to be low.
- The polycyclic aromatic hydrocarbon (PAH) content of most teas when brewed is below the limit of detection of current analytical methodology. Although analysis has occasionally shown low levels in tea leaves as evidenced by trade summaries of in-house generated data. Some teas, notably Lapsang Souchong, are 'smoked' as part of their processing and contain measurable levels of PAHs; given that most of the PAHs present are relatively insoluble in water and as a consequence their levels in the infusion as consumed are much reduced it is considered that they present a minimal food safety risk.
- Toxic substances can be present as a result of accidental or deliberate contamination.
  From time to time, there have been warnings that teas have been deliberately contaminated in the country of origin. In the past ten years, there have been two such instances and despite intensive checks both at source and by the packers on receipt, no contamination has been found. Given that warnings have been issued when deliberate contamination has been threatened and the fact no contamination has been found it is considered that the risk of chemical contamination by deliberate contamination is low.
- Chemical contamination resulting from lubricants, fumigation of containers, transport and storage are known but occur infrequently and thus presents a low risk in food safety terms.
- Chemical contamination could also result from inappropriate personal behaviour which might contaminate food, for example smoking when handling harvested tea leafs and tea (packaged or unpackaged).
- Instances of adulteration are rare and traditionally tea quality is assessed by tea tasters who base their judgements on subjective assessments of the leaf before and after infusion and the appearance, odour and taste of the liquor, rather than by reference to its chemical composition. However certain chemical characteristics have been defined and given in an International Standard.[6, 9] The parameters given in this Standard are helpful if the tea exhibits abnormal characteristics or adulteration is suspected.

Foreign matter

Foreign matter may be extraneous material naturally associated with tea, e.g. parts of other plants growing nearby, or foreign material introduced during the process, e.g. stones, glass, metal, scale, insect fragments, jewellery, packaging materials etc.

While there are various steps in the manufacturing process designed to remove foreign matter, teas received by European packers can contain a variety of extraneous matter. The quantity present is very low and its nature presents little food safety risk. This low risk is further reduced when considered in conjunction with the cleaning processes employed by the European packer and the manner in which the consumer prepares the beverage.

Microbiological contamination

There are no reported microbiological food safety hazards relating to tea[7]. Tea contains a natural level of micro-organisms but as it has a low water activity, these present negligible hazard providing the tea is kept dry. The European Union's Scientific Committee on Food reviewed the micro-biological risks associated with tea in 1997 and concluded that: *Tea has a long history of safe use and the Committee is unaware of any safety problems related to moisture in tea. This may be attributed to its low moisture content (i.e. low water activity) and the high content of anti-microbial substances. Moisture levels up to 10% seem to give an acceptable safety margin for the storage of tea*[8].

5. MEASURES TO BE APPLIED BY THE LOCAL PRIMARY PRODUCERS TO MONITOR AND REDUCE/ELIMINATE POTENTIAL FOOD SAFETY HAZARDS

Local primary producers producing or harvesting teas are to take adequate measures as appropriate, in accordance with the guidance contained in Annex 1 of Regulation (EC) No 852/2004:

- to keep clean and, where necessary after cleaning, to disinfect, in an appropriate manner, facilities, equipment, containers, crates, vehicles and vessels;
- to ensure, where necessary, hygienic production, transport and storage conditions for, and the cleanliness of, plant products;
- to use potable water, or clean water, whenever necessary to prevent contamination;
- to ensure that staff handling foodstuffs are in good health and undergo training on health risks;
- to make certain that those who come directly in contact with tea leafs and tea are not likely to contaminate it by maintaining an appropriate degree of personal cleanliness (e. g. wash hands after eating, smoking etc.), and by behaving and operating in an appropriate manner;
- smoking should only be permitted in designated areas which are separated from any processing or storage areas
- as far as possible to prevent animals and pests from causing contamination;
- to store and handle wastes and hazardous substances so as to prevent contamination;
- to take account of the results of any relevant analyses carried out on samples taken from plants or other samples that have importance to human health;
- to use plant protection products and biocides correctly, as required by the relevant legislation.
- to keep records on:
    - any use of plant protection products and biocides;
    - any occurrence of pests or diseases that may affect the safety of products of plant origin;
    - the results of any relevant analyses carried out on samples taken from plants or other samples that have importance to human health.

The primary producer may be assisted by other persons, such as, agronomists and farm technicians, with the keeping of records.

6. MEASURES TO BE APPLIED BY THE LOCAL PROCESSORS TO MONITOR AND REDUCE/ELIMINATE POTENTIAL FOOD SAFETY HAZARDS

It is expected that local processors adhere to the requirements of Regulation (EC) No 852/2004 on the hygiene of foodstuffs[1] and CODEX Recommended International Code of Practice – General Principles of Food Hygiene[2]. These requirements are a prerequisite for the successful application HACCP.

Regulation (EC) No 852/2004 gives guidance on general hygiene requirements for all food business operators, including the following:

- General requirements for food premises
- Specific hygiene requirements in rooms where foodstuffs are prepared, treated or processed
- Transport
- Equipment requirements
- Food Waste
- Water supply
- Personal hygiene
- Provisions applicable to foodstuffs
- Provisions applicable to the wrapping and packing of foodstuffs
- Training

A HACCP system should be implemented and operated by local processors in accordance with the guidance set down in the Annex to the CODEX document HACCP System and Guidelines for its Application[2].

The HACCP system, which is risk based and systematic, identifies specific hazards and measures for their control to ensure the safety of food. HACCP is a tool to assess hazards and establish control systems that focus on prevention rather than relying mainly on end-product testing. Any HACCP system is capable of accommodating change, such as advances in equipment design, processing procedures or technological developments.

The HACCP system consists of the following seven principles:

PRINCIPLE 1: Conduct a hazard analysis.

PRINCIPLE 2: Determine the Critical Control Points (CCPs).

PRINCIPLE 3: Establish critical limit(s).

PRINCIPLE 4: Establish a system to monitor control of the CCP.

PRINCIPLE 5: Establish the corrective action to be taken when monitoring indicates that a particular CCP is not under control.

PRINCIPLE 6: Establish procedures for verification to confirm that the HACCP system is working effectively.

PRINCIPLE 7: Establish documentation concerning all procedures and records appropriate to these principles and their application.

The application of HACCP principles consists of the following logic sequence of tasks.

1. Assemble HACCP Team
2. Describe Product
3. Identify Intended Use
4. Construct Flow Diagram
5. On-site Confirmation of Flow Diagram
6. List all Potential Hazards; Conduct a Hazard Analysis; Consider Control Measures
7. Determine Critical Control Points (CCP)
8. Establish Critical Limits for each CCP
9. Establish a Monitoring System for each CCP
10. Establish Corrective Actions
11. Establish Verification Procedures
12. Establish Documentation and Record Keeping

The CODEX document *HACCP System and Guidelines for its Application*[2] should be consulted for a complete description of the requirements and implementation of HACCP.

The precise hazards identified and their control will be dependent upon the results of local processors hazard analysis, however the following illustrate the types of controls that may be appropriate to implement:

Chemical contamination

In addition to the prerequisite hygiene controls concerning the use chemicals in the growing and production environment it may be appropriate to regularly measure and record sensory parameters, such as visual appearance, odour and taste, of the tea during production to check for malicious or accidental chemical contamination of the product.

Foreign matter

Measures to remove foreign matter with sieves and ferrous material with magnets before blending and packing together with frequent monitoring of these devices are likely to be appropriate.

Microbiological contamination

Excess moisture is the main issue relating to the development of microbiological contamination of tea. Visual inspection in combination with regular checking and recording of moisture levels during production against a critical limit, together with appropriate action where a trend towards loss of control is observed will help control the hazard.

7. MEASURES TO BE APPLIED BY THE EUROPEAN PACKER TO MONITOR AND REDUCE/ELIMINATE POTENTIAL FOOD SAFETY HAZARDS

7.1 PREFACE

The first points at which food safety hazards may be identified are, for the most part, at the producing factory in the country of origin and it is there that the monitoring activity and corrective actions should occur. While there is growing evidence that hygiene standards in tea factories are improving, the European Tea Trade recognizes that it cannot entirely devolve its responsibilities for food safety to the producers of the primary raw material. Tea Buyers may frequently visit the producers but they can only inspect/audit a tiny fraction of the many thousands of tea gardens and tea factories. For this reason it is recommended that the European packers' in-house quality programmes encompass suitable checks on the tea as received to ensure compliance with their legal obligations relating to food safety and to demonstrate 'due diligence'.

7.2 DESCRIPTION OF MEASURES

Chemical contamination

Although hazard analysis shows that the risk of chemical contamination is low it is recommended that European packers carry out checks for chemical contamination on teas as received, either on selected batches and/or against a predefined audit programme as part of due diligence programme rather than HACCP. The testing frequency should be based upon the origin of the tea, the risks posed and other information in their possession, e.g. whether there were known problems either with the transport used or at the storage facilities (such as fumigation of containers or storage facilities). Such a protocol is outlined in the latest version of the *THIE Code of Practice – Pesticide Residues in Tea*.

In the case of pesticides and heavy metals, the results of the analyses performed by European packers are collated and an annual summary prepared. Similarly, members of the trade share information on other chemical hazards that might be present. The collation of data in both these areas facilitates wider coverage of teas on the world market than would be possible by one company on its own and ensures that issues are rapidly identified and addressed by the trade as a whole.

When chemical contamination as the result of a deliberate act is suspected agreed trade wide measures are implemented both in the country of origin and on receipt by the packers to ensure that appropriate checks are carried out to ensure that any food safety risk is identified and eliminated. These measures should be agreed with the Packer's national authority responsible for food safety.

Foreign matter

The presence of foreign matter in tea as received is likely and would, if not removed, provide a low food safety risk. Measures to remove foreign matter are implemented by the European packers as part of their HACCP programme. i.e. after emptying the tea from the chests it is cleaned (passage across sieves and past magnets) before blending and packing.

Microbiological contamination

Excess moisture is the main issue relating to microbiological contamination. The moisture content of tea on receipt by the European Packer is below the 10% safety level suggested by the EU, typically it is 8 %, and hence checks on moisture content and microbiological load are unnecessary.

Should a package become wet mould growth may occur, this can result in taint and thus the tea may become unacceptable on quality grounds. The presence of excess moisture will normally be apparent as the packaging will show signs of water damage and the tea will contain large lumps of mouldy tea.

Individual companies may have in-house standards for monitoring purposes and European packers are recommended to carry out checks for moisture content and microbiological load on teas as received against a predefined audit programme as part of due diligence programme and quality monitoring rather than HACCP.

REFERENCES

1. Regulation (EC) No 852/2004 of the European Parliament and of the Council of 29 April 2004 on the hygiene of foodstuffs. Official Journal of the European Communities L226/3. http://europa.eu.int/eur-lex/lex/LexUriServ/site/en/oj/2004/l_226/l_22620040625en00030021.pdf

2. Recommended International Code of Practice – General Principles of Food Hygiene including Annex on Hazard Analysis and Critical Control Point (HACCP) System and Guidelines for its Application. Codex Alimentarius Commission CAC/RCP1-1969, Rev 4-2003. http://www.codexalimentarius.org/download/standards/23/CXP_001e.pdf

3. Regulation (EC) No 396/2005 of 23 February 2005 on the maximum residue levels of pesticides in or on food and feed of plant and animal origin and amending Council Directive 91/414/EC (as amended).

4. UK Arsenic in Food Regulations 1959 – SI 1959 No.831 (as amended).

5. UK Tin in Food Regulations 1992 – SI 1992 N.496

6. International Standard ISO 3720 –2011 Black Tea – Definition and basic requirements

7. The Microbiological Safety and Quality of Food, Aspen Publishers, Inc. Gaithersburg, Maryland 2000, Volume 1 Chapter 6 p960-964

8. Scientific Committee on Foods, European Union (1997). Opinion on the potential micro-biological risk arising from the presence of moisture in tea (expressed on 19th September 1997)

9. International Standard ISO 11287 – 2011 Green Tea – Definition and basic requirements

10. Regulation (EC) No 1881/2006 of 19 December 2006 setting maximum levels for certain contaminants in foodstuffs

APPENDIX 1

Primary production and processing of black tea

Primary production and associated operations:

GROWING

Approved agrochemicals may be applied.

PLUCKING

Tender green shoots/leaves harvested

TRANSPORT TO FACTORY

Green leaf transported to the tea factory

Tea inspected for 'quality' prior to entry into the factory

Processing:

WITHERING

Green leaf spread to a depth of about 10 cm onto troughs which generally have a perforated base; cold or warm air is blown through the leaf for 12-18 hours; during withering the factory staff remove any obvious foreign material and during withering small particles adhering to the surface of the leaf can fall through the base of the trough with the agitation caused by the blowing of air through the leaf and the periodic manual turning of the leaf.

SIFTING

Withered leaf is generally passed across sifters and over magnets.

MACERATION

Withered leaf is macerated (Rotorvane/Lawrie Tea Process/Cut Torn Crushed/Rollers) to tear the leaf and rupture the cells so releasing the enzymes necessary for fermentation.

FERMENTATION

Macerated leaf is held in warm, humid air for up to 2 hours.

DRYING

Fermented leaf is dried in a current of hot air which stops the fermentation and reduces the moisture content to below 3 %w/w

GRADING

The dry leaf is size graded by passing across electrostatic rollers, a series of sieves and winnowing apparatus.

PACKING

The graded tea is packed into containers for shipment (wooden tea chests, paper laminate sacks, polythene bags in gunny sacks or polythene bags in cardboard cartons).

APPENDIX 2

Primary production and processing of green tea

Primary production and associated operations:

GROWING

Approved agrochemicals may be applied.

PLUCKING

Tender green shoots/leaves harvested

TRANSPORT TO FACTORY

Green leaf transported to the tea factory

Tea inspected for ‘quality’ prior to entry into the factory

Processing:

ENZYME DEACTIVATION

The green leaf is heated to deactivate the enzymes.

DRYING

Deactivated leaf is progressively rolled, shaped and dried to reduce the moisture content to c. 3 %w/w

GRADING

The dry leaf is size graded by passing across, electrostatic rollers, a series of sieves and winnowing apparatus.

PACKING

The graded tea is packed into containers for shipment (wooden tea chests, paper laminate sacks, polythene bags in gunny sacks or polythene bags in cardboard cartons).

APPENDIX 3

Primary production and processing of white tea

Primary production and associated operations:

GROWING

Approved agrochemicals may be applied.

PLUCKING

Tender white shoots/leaves harvested

TRANSPORT to FACTORY

White is leaf transported to the tea factory

Tea is inspected for ‘quality’ prior to entry into the factory

Processing:

DRYING

The fresh buds / leaves are thinly spread and allowed to dry naturally at ambient temperature to reduce the moisture content to c. 3 %w/w

GRADING

The dry leaf is graded by passing across a series of sieves, winnowing and colour-sorting apparatus.

PACKING

The graded tea is packed into containers for storage/shipment (vacuum packed cartons/sacks).

APPENDIX 4

Generic example of a HACCP plan for a tea blending operation (For illustrative purposes only)

PROCESS STEP	HAZARD	PREVENTATIVE MEASURES	CCP No.	CRITICAL LIMITS	MONITORING		CORRECTIVE ACTION & RESPONSIBILITY
					PROCEDURE	FREQUENCY	
1 Teas and herbs delivered to original stores from external source, inspected and stored	Fork lift mechanical damage Pest infestation Transit damage Unsuitable packaging, foreign bodies Environmental conditions	(Training pre requisite) (Ref pest control pre requisite) Goods in Checks Material Specification Sheet/Goods in Checklist Canopy / Goods in Checklist	No	No major visual damage to delivered products.	X101 X132 X085 X038 EX038	Each delivery Each batch	Product rejected and returned to supplier. Quality dept informed. Responsibility – Production/Quality
2 Tea unloaded, inspected and stored as blend kits	Fork lift mechanical damage Pest infestation Transit damage Unsuitable packaging Environmental	(Training pre requisite) (Ref pest control pre requisite) Goods in checks Material Spec. Sheet / Goods in Checklist Canopy /Goods in Checklist	No	No visual damage to delivered products.	X101 X132 X085 X038 EX038	Each Delivery of blend kits	Product rejected and returned to supplier. Quality dept informed. Responsibility – Production/Quality

PROCESS STEP	HAZARD	PREVENTATIVE MEASURES	CCP No.	CRITICAL LIMITS	MONITORING		CORRECTIVE ACTION & RESPONSIBILITY
					PROCEDURE	FREQUENCY	
3 Bags and sacks to automatic opener	Fork lift mechanical damage	(Training pre requisite)	No	No visible damage to product	X038/6 X101/4 X085/2 X038/6	Each blend	Inform manager. Inform Quality Ops Responsibility - Production
4 Bags cut, tea drops into system over magnets	Paper Foil Foreign Bodies in Tea	Preventative Measures on Cutting Blade Procedure for Jammed Bags Procedure for broken blade (Ref Glass pre-requisite) Documented Magnet Check Feedback via commodities to supplier on period basis	No	No large amounts of foreign bodies in tea. No foreign bodies added to tea	X216 X207 X249	Each blend	Product placed on hold – reject or release as appropriate. Change magnets and rechallenge. Responsibility – Production/Quality Ops
5 Tea blended in vessels	Physical Hazards Introduced (Jewellery, Pens, Nails) by Operator when clearing residual tea before and after organic product run.	Visual (Ref Personal housekeeping pre requisite) (Ref Glass pre-requisite)	No	No foreign bodies added to tea.	X127	Each blend Every 20 working days (min)	Inform manager. Place product on hold and isolate FB or reject blend. Inform Quality Ops Responsibility - Production

PROCESS STEP	HAZARD	PREVENTATIVE MEASURES	CCP No.	CRITICAL LIMITS	MONITORING		CORRECTIVE ACTION & RESPONSIBILITY
					PROCEDURE	FREQUENCY	
6 Tea dropped over vibratory sieves Sieves and finds monitored.	Foreign bodies in tea Airborne Pests Personnel Poor hygiene	Effective sieving: vibratory sieves – Finds discarded down chutes (Ref pest control pre requisite) Side covers Documented sieve check (Ref Personal housekeeping pre requisite) (Ref Glass pre-requisite) (Ref hygiene pre-requisite)	Yes CCP3	Correct sieve in place and undamaged. Blender sieves 1,2 & 3 7.14mm and 2.78mm. Blender sieve 4 7mm and 2.75 mm	X240 X132 X127 X120	Documented sieve check daily – correct sieve in place and undamaged. Daily cleaning.	Inform manager and QO if no finds or more than 30 finds are recorded in either bin for all shifts on two consecutive days. Check sieves for blockage or damage. Stop blending. Isolate tea and reject as appropriate. Inform Quality Ops Responsibility – Production

PROCESS STEP	HAZARD	PREVENTATIVE MEASURES	CCP No.	CRITICAL LIMITS	MONITORING		CORRECTIVE ACTION & RESPONSIBILITY
					PROCEDURE	FREQUENCY	
7 Tea discharged from blending system into tote bins passing over magnets and sampled.	Foreign Bodies in tea Foreign Bodies in/falling in empty bins Personnel Poor Hygiene Airborne Pests	Magnets and Visual Visual Open and close valve before filling (Ref Glass pre-requisite) (Ref Personal housekeeping pre requisite) (Ref hygiene pre-requisite) (Ref pest control pre requisite)	Yes CCP4	Correct magnet in place, working to the correct sensitivity. Empty bins – clean i.e. no foreign bodies	X240 X207 X127 X120 X132 X216	Magnets checked as per procedure at a defined frequency. Visual – before filling – each empty bin. Visual – whilst filling- each bin. Vibrator after each leaf blend.	Inform manager. Stop blending Isolate tea and reject as appropriate. Check magnets for blockage or damage. Replace magnets and rechallenge. Inform Quality Ops Responsibility – Production
8 Bin weighed, identified and stored in WIP	Foreign Bodies Falling In Airborne Bodies (Flying Pests)	(Ref hygiene pre-requisite) Visual Colour coded bin covers (Ref pest control pre requisite) (Ref Glass pre-requisite)	No	No foreign bodies in bin	X216 X132	Each Bin.	Inform manager. Place product on hold. Isolate foreign body/bodies or reject. Inform Quality Ops. Responsibility – Production

Annex 6

Overview quoted EU legislation and ISO standards

General requirements for all categories in EU legislation	**Regulation (EC) No 178/2002** of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety (in its current version)
Ingredients	**Regulation (EC) No 1333/2008** of the European Parliament and of the Council of 16 December 2008 on food additives (in its current version)
Labelling in general	**Regulation (EU) No 1169/2011** of the European Parliament and of the Council of 25 October 2011 on the provision of food information to consumers, amending Regulations (EC) No 1924/2006 and (EC) No 1925/2006 of the European Parliament and of the Council, and repealing Commission Directive 87/250/EEC, Council Directive 90/496/EEC, Commission Directive 1999/10/EC, Directive 2000/13/EC of the European Parliament and of the Council, Commission Directives 2002/67/EC and 2008/5/EC and Commission Regulation (EC) No 608/2004 (in its current version)
Protected designation of origin or protected geographical indication	**Regulation (EU) No 1151/2012** of the European Parliament and of the Council of 21 November 2012 on quality schemes for agricultural products and foodstuffs **Commission Implementing Regulation (EU) No 449/2011** of 6 May 2011 entering certain names in the register of protected designations of origin and protected geographical indications (陕西苹果 (Shaanxi ping guo) (PDO), 龙井茶 (Longjing Cha) (PDO), 琯溪蜜柚 (Guanxi Mi You) (PDO), 蠡县麻山药 (Lixian Ma Shan Yao) (PGI)) (in its current version) **Commission Implementing Regulation (EU) No 1050/2011** of 20 October 2011 entering a name in the register of protected designations of origin and protected geographical indications (Darjeeling (PGI))

Pesticide residues and contaminants	**Regulation (EC) No 396/2005** of the European Parliament and of the Council of 23 February 2005 on maximum residue levels of pesticides in or on food and feed of plant and animal origin and amending Council Directive 91/414/EEC (in its current version)
	Commission Regulation (EC) No 1881/2006 of 19 December 2006 setting maximum levels for certain contaminants in foodstuffs (in its current version)
Radioactivity	**Commission Regulation (EC) No 1609/2000** of 24 July 2000 establishing a list of products excluded from the application of Council Regulation (EEC) No 737/90 on the conditions governing imports of agricultural products originating in third countries following the accident at the Chernobyl nuclear power station (in its current version)
	Commission Implementing Regulation (EU) 2016/6 of 5 January 2016 imposing special conditions governing the import of feed and food originating in or consigned from Japan following the accident at the Fukushima nuclear power station and repealing Implementing Regulation (EU) No 322/2014
Irradiation	**Directive 1999/2/EC** of the European Parliament and of the Council of 22 February 1999 on the approximation of the laws of the Member States concerning foods and food ingredients treated with ionising radiation (in its current version)
	Directive 1999/3/EC of the European Parliament and of the Council of 22 February 1999 on the establishment of a Community list of foods and food ingredients treated with ionising (in its current version)
Hygiene	**Regulation (EC) No 852/2004** of the European Parliament and of the Council of 29 April 2004 on the hygiene of foodstuffs (in its current version)
GMO	**Regulation (EC) No 1829/2003** of the European Parliament and of the Council of 22 September 2003 on genetically modified food and feed (in its current version)
	Regulation (EC) No 1830/2003 of the European Parliament and of the Council of 22 September 2003 concerning the traceability and labelling of genetically modified organisms and the traceability of food and feed products produced from genetically modified organisms and amending Directive 2001/18/EC (in its current version)

Allergens	**Regulation (EU) No 1169/2011** of the European Parliament and of the Council of 25 October 2011 on the provision of food information to consumers, amending Regulations (EC) No 1924/2006 and (EC) No 1925/2006 of the European Parliament and of the Council, and repealing Commission Directive 87/250/EEC, Council Directive 90/496/EEC, Commission Directive 1999/10/EC, Directive 2000/13/EC of the European Parliament and of the Council, Commission Directives 2002/67/EC and 2008/5/EC and Commission Regulation (EC) No 608/2004 (in its current version)

Specific requirements for certain categories in EU legislation

Other food ingredients	**Regulation (EC) No 178/2002** of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety (in its current version)
Flavourings	**Regulation (EC) No 1334/2008** of the European Parliament and of the Council of 16 December 2008 on flavourings and certain food ingredients with flavouring properties for use in and on foods and amending Council Regulation (EEC) No 1601/91, Regulations (EC) No 2232/96 and (EC) No 110/2008 and Directive 2000/13/EC (in its current version)
Vitamins and minerals	**Regulation (EC) No 1925/2006** of the European Parliament and of the Council of 20 December 2006 on the addition of vitamins and minerals and of certain other substances to foods (in its current version)
Food additives	**Regulation (EC) No 1333/2008** of the European Parliament and of the Council of 16 December 2008 on food additives (in its current version)

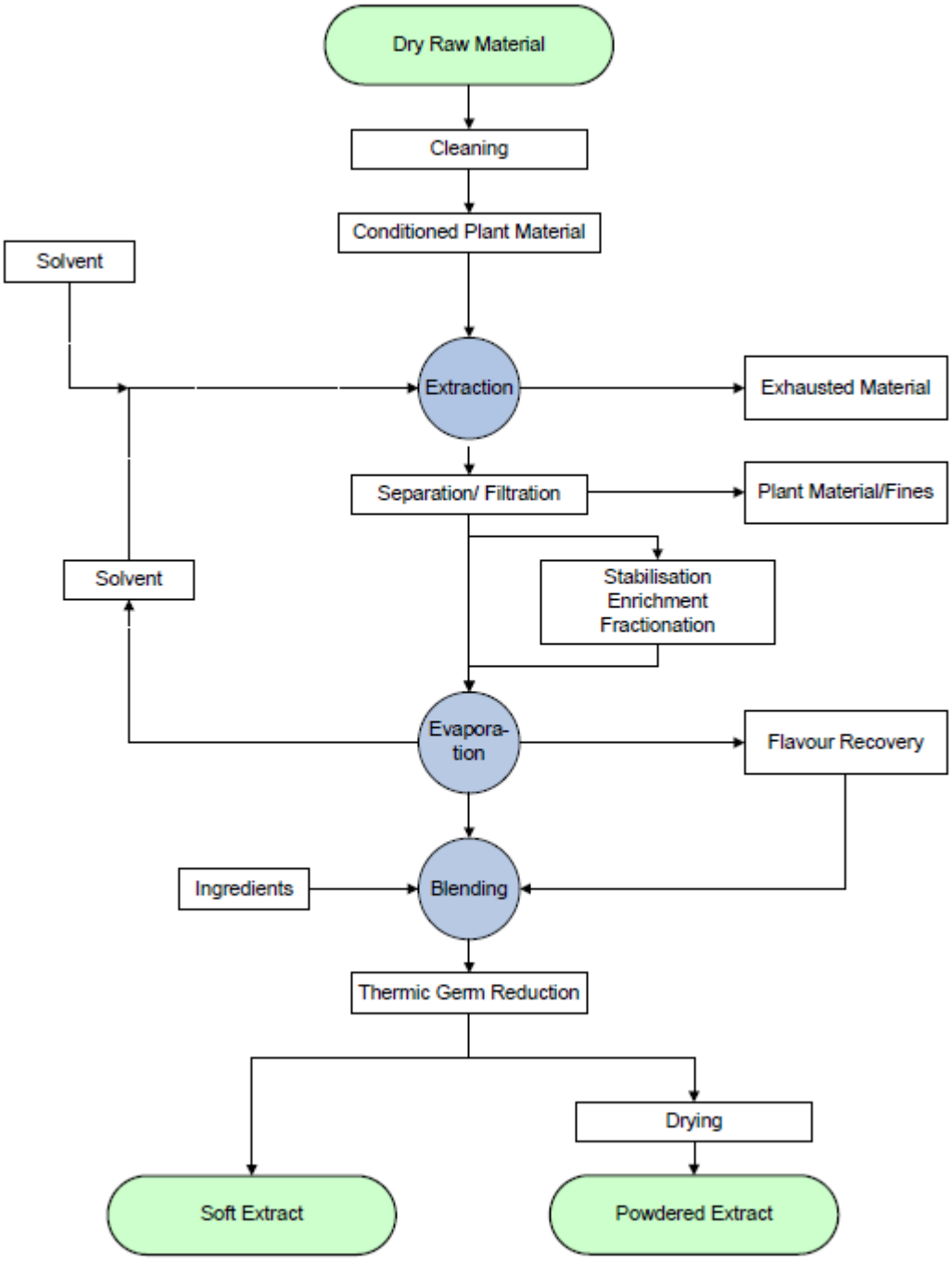
ISO Standards

ISO 3720	**International Standard ISO/FDIS 3720:2011 (E)** Black tea – Definition and basic requirements
ISO 11287	**International Standard ISO 11287:2011 (E)** Green tea – Definition and basic requirements
ISO 1573	**International Standard ISO 1573-1980 (E) *** Tea – Determination of loss in mass at 103 °C **** last reviewed in 2015.***
ISO 3103	**International Standard ISO 3103-1980 (E) *** Tea – Preparation of liquor for use in sensory tests **** last reviewed in 2013.***

ISO 18593	**International Standard ISO 18593:2004** Microbiology of food and animal feeding stuffs – Horizontal methods for sampling techniques from surfaces using contact plates and swabs
ISO 4833-1:2013	**International Standard ISO 4833-1:2013** Microbiology of the food chain -- Horizontal method for the enumeration of microorganisms -- Part 1: Colony count at 30 degrees C by the pour plate technique
ISO 4833-2:2013	**International Standard ISO 4833-2:2013** Microbiology of the food chain -- Horizontal method for the enumeration of microorganisms -- Part 2: Colony count at 30 degrees C by the surface plating technique
ISO 21527-2	**International Standard ISO 21527-2:2008*** Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of yeasts and moulds - Part 2: Colony count technique in products with water activity less than or equal to 0,95 **** last reviewed in 2012.***
ISO 16649-1	**International Standard ISO 16649-1:2001*** Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of beta-glucuronidase-positive Escherichia coli – Part 1: Colony-count technique at 44 degrees C using membranes and 5-bromo-4-chloro-3-indolyl beta-D-glucuronide ****last reviewed in 2012.***
ISO 16649-2	**International Standard ISO 16649-2:2001*** Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of beta-glucuronidase-positive Escherichia coli - Part 2: Colony-count technique at 44 degrees C using 5-bromo-4-chloro-3-indolyl beta-D-glucuronide ****last reviewed in 2012.***
ISO 6579	**International Standard ISO 6579:2002*** Microbiology of food and animal feeding stuffs - Horizontal method for the detection of Salmonella spp. ****last reviewed in 2012.***
ISO 6079	**International Standard ISO 6079:1990*** Instant tea in solid form – Specification ****last reviewed in 2013.***

Annex 7

General principles of tea extract manufacture



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Annex 8

THIE Standard procedure for preparation of tea extract liquors for sensory evaluation

Introduction

Extracts from tea are foodstuffs which are traditionally used for the preparation of foodstuffs, e.g. instant products, ready mixes, as ingredients, because of their health and sensory properties. Besides, the physical and chemical quality parameters the sensory characteristics are of special importance for the overall product quality. To characterise the sensory quality of tea extracts, 3 basic types of sensory examinations have to be assessed:

- **Colour of liquor**
- **Aroma (smell) of liquor**
- **Flavour (taste) (and possible "off-flavour") of liquor**

For proper evaluation of the sensory quality, THIE recommends its Standard Procedure for Preparations of tea extract Liquors for Sensory Evaluation of Extracts. For comparable results, it is important to define basic test parameters:

1. Water Quality

Flavour, colour and appearance (e.g. clearness, turbidity) of the liquor are affected by the hardness (mineral composition) of the water used for infusion. Therefore water used for the sensory test should be demineralised, non-chlorinated water.

2. Water Temperature

For proper evaluation of the sensory properties of tea extracts, it has to be distinguished between:

a) hot water soluble tea extracts

b) cold water soluble tea extracts.

For hot water soluble tea extracts boiling water has to be used.

Tasting should be performed 5-10 minutes after preparation of the liquor, when the dilution has got a temperature of about 70°C.

For cold water soluble tea extracts, water temperature should be 15-25°C.

For both temperatures, it has to be guaranteed, that tea extracts have been completely dissolved.

3. Weight of Tea Extracts, Volume of water, Preparation Time

It is recommended to use following parameters:

- Tea extract: min. 1.2g / 1l (dry mass of extracts from tea) as defined in the guideline document under *1.4 General Characteristics of the Product*.

Procedure

- Weigh into a cup / glass beaker the amount of material given above.
- Fill the cup / glass beaker with the corresponding amount of cold or boiling water, depending on quality of tea extract.
- Ensure that tea extract is properly dissolved, e.g. stir with a tea spoon / glass stirrer.
- Cold soluble tea extract can be evaluated immediately after dissolution of the extract.
- Hot water soluble tea extracts should be evaluated after 5-10 min.
- Colour is evaluated optically against an agreed standard. The standard is prepared in the same way and at the same time.
- Aroma and flavour are evaluated by tasting against an agreed standard. The standard is prepared in the same way and at the same time.
- Test results are assigned to the lot and documented.

Annex 9

Decaffeinated tea extracts

EU country	Maximum content of caffeine in tea extracts (in dry mass)	Ruling/Regulation
Austria	1.2 % in dry mass	Österreichisches Lebensmittelbuch, IV. Auflage, Codex-kapitel B 31, Tee und teeähnliche Erzeugnisse, veröffentlicht 19.01.2009
Belgium		Koninklijk besluit betreffende thee en thee-extracten, 28.04.1999
France		Décret du 7 octobre 1932 pris pour l'application de la loi du 1er août 1905 sur la répression des fraudes dans la vente des marchandises et des falsifications des denrées alimentaires en ce qui concerne le café, la chicorée et le thé
Germany	1.2 % in dry mass	Deutsches Lebensmittelbuch, Leitsätze für Tee und teeähnliche Erzeugnisse, Neufassung, bekanntgemacht 26.01.1999
Italy		Decreto Ministeriale, Disciplina della produzione e del commercia del thè deteinato, 12.12.1979
Slovakia		Decree of the Agriculture Ministry of the Slovak Republic and the Health Ministry of the Slovak Republic, issuing the chapter of the Foodstuffs Code of the Slovak Republic that deals with flavouring products
Switzerland		Verordnung des EDI über alkoholfreie Getränke (insbesondere Tee, Kräutertee, Kaffee, Säfte, Sirupe, Limonaden) vom 23. November 2005

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Annex 10

Recommended microbiological guideline for tea (Camellia sinensis)

(Former ETC document)

OBJECTIVE

This Guideline is a recommendation for tea (*Camellia sinensis*). It refers to tea as defined in the THIE Compendium of Guidelines for Tea and described in Part I thereof, under *1.3 Processing.* In addition this tea might have undergone further treatment (e.g. decaffeination), blending and packaging.

Pu Erh Tea is excluded from this Guideline due to its different manufacturing process.

BACKGROUND

No internationally agreed official microbiological parameters were available for tea (*Camellia sinensis*), due to the long history of safe use, low moisture content and the high content of antimicrobial substances. To facilitate trade in tea and to promote a high quality policy, THIE as a recognised industry association has now implemented the following Guideline based on experience of the microbiological profile of tea.

Total Plate Count	$\leq 10^7$/g
Yeasts	$\leq 10^4$/g
Moulds	$\leq 10^5$/g
E. coli	$\leq 10^2$/g
Salmonella	absent in 125 g

SAMPLING

- 5 random samples of 50 g are to be collected from the shipment.
- The 5 samples will be mixed to a composite sample.
- The composite sample is the basis for all laboratory investigations, including salmonella.

METHODS *

Aerobic Plate Count

Microbiology of the food chain – Horizontal method for the enumeration of microorganisms – Part 1: Colony count at 30 degrees C by the pour plate technique (ISO 4833-1:2013); Microbiology of the food chain – Horizontal method for the enumeration of microorganisms – Part 2: Colony count at 30 degrees C by the surface plating technique (ISO 4833-2:2013 and ISO 4833-2:2013/Cor 1:2014); European Reference Method according to Regulation (EC) No 1441/2007

Yeasts and Moulds

Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of yeasts and moulds – Part 2: Colony count technique in products with water activity less than or equal to 0.95 (ISO 21527-2:2008)

E. coli

Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of beta-glucuronidase-positive Escherichia coli – Part 1: Colony-count technique at 44 degrees C using membranes and 5-bromo-4-chloro-3-indolyl beta-D-glucuronide (ISO 16649-1:2001) or Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of beta-glucuronidase-positive Escherichia coli – Part 2: Colony-count technique at 44 degrees C using 5-bromo-4-chloro-3-indolyl beta-D-glucuronide (ISO 16649-2:2001); European Reference Method according to Regulation (EC) No 1441/2007

Salmonella

Microbiology of food and animal feeding stuffs – Horizontal method for the detection of Salmonella spp. (ISO 6579:2002); Annex D: Detection of Salmonella spp. in animal faeces and in environmental samples from the primary production stage (ISO 6579:2002/Amd 1:2007); European Reference Method according to Regulation (EC) No 1441/2007

* Other methods can be used if they are checked against a reference method (official method and suitability tested (recovery of reference microorganisms).