



HARMONIZED SYSTEM
COMMITTEE

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O. Eng.

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POSSIBLE AMENDMENT OF HEADING 09.06
(PROPOSAL BY SRI LANKA ADMINISTRATION)

(Item VII.8 on Agenda)

I. BACKGROUND

1. On 9 September 2003, the Secretariat received a note from the **Sri Lanka** Customs Administration asking it to submit to the Harmonized System Committee a proposal to amend the HS Nomenclature to create specific subheadings for cinnamon in heading 09.06. The **Sri Lanka** note is set out below.

II. NOTE FROM THE SRI LANKA ADMINISTRATION

"Proposal from Sri Lanka to amend the Nomenclature to classify Cinnamon, Cassia and other spices derived from the plants of the Lauraceae family within the scope of heading 09.06 and to create specific subheadings for Cinnamon"

2. **Sri Lankan** Administration is of the view that the present text of heading 09.06 does not adequately distinguish the different spices derived from plants of the family Lauraceae and therefore wishes to propose an amendment to the heading text so as to make a clear distinction between cinnamon and other spices falling within the scope of heading 09.06. It is also the wish of the **Sri Lankan** Administration to create specific subheadings, under heading 09.06, to identify cinnamon separately in order to monitor its international trade, which is an important economic interest to **Sri Lanka**.

Proposal to amend the heading text of 09.06

3. The present text of heading 09.06 reads as "Cinnamon and cinnamon-tree flowers". It does not distinguish the true spice cinnamon (*cinnamomum zeylanicum* Blume*) from other spices derived from plants of the family Lauraceae.

* This is synonymous with *C. Verum*

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4. The most compelling reason for the revision of the heading text is the recognition by the ISO that the spice cinnamon is different from the cassia and other spices derived from plants of the family Lauraceae. It should be noted that ISO 6538 specifies standards for cassia type while ISO 6539 spells a separate standard for cinnamon.
5. Our administration is therefore of the view that the term “cinnamon” should be used only for whole or ground (powdered) cinnamon of the Sri Lankan type, which is identical to the Madagascan type and Seychelles type, which is the bark of the tree or shrub *cinnamomum zeylanicum* Blume (see ISO 6539 Specification). On the other hand the term “Cinnamon” should not cover Cassia (Chinese type, Indonesian type and Vietnamese type), in quills, whole, in pieces or ground (powdered), which is the bark of the trees *cinnamomum aromaticum* (Nees) syn. *Cinnamomum burmanii* (C.G.Nees) Blume and *cinnamomum loureirii* Nees (see ISO 6538 Specification). (*The ISO standards will be made available in the meeting room*)
6. At present, in the Harmonized System Nomenclature, the term “cinnamon” is used for a wide group of species of Lauraceae family. It is our view that this is misleading the international trade and consumers.
7. The **Sri Lankan** Administration has no intention to change the scope of heading 09.06. It is our opinion that the present scope of heading 09.06 covers predominantly cinnamon and cassia. It is not very clear about the other spices of Lauraceae family that would be covered within the scope of heading 09.06. However, in view of the present heading text, our administration feels that there may exist other spices derived from plants of the family Lauraceae, which may have been traded as cinnamon and cinnamon-tree flowers.
8. The **Sri Lankan** Administration, therefore, proposes the following amendment to the text of heading 09.06 in order to distinguish cinnamon from cassia and other spices derived from plants of the family Lauraceae.

09.06 Cinnamon, cassia and other spices from the Lauraceae family and their tree flowers.

Proposal to introduce new subheadings in heading 09.06

9. Sri Lankan cinnamon, traditionally known as Ceylon cinnamon, was well known in the international trade for a long period of time. Sri Lanka is the major producer of cinnamon. Madagascar and Seychelles are the other two countries which produce cinnamon.
10. With regard to the statistics, during 2001 and 2002, **Sri Lanka** alone has exported US\$ 41.14 and US\$ 42.25 million worth of cinnamon respectively, classifiable in subheading 0906.10. With regard to the subheading 0906.20, **Sri Lanka** has exported US\$ 0.41 and US\$ 0.19 million respectively.
11. Cinnamon is an important commodity for **Sri Lankan** economy to promote this product in the international market. In order to monitor the international trade of cinnamon, the **Sri Lankan** Administration request to consider the creation of two new subheadings as follows :

- Neither crushed nor ground :

0906.11 -- Cinnamon

0906.12 -- Other

- Crushed or ground :

0906.21 -- Cinnamon

0906.29 -- Other

Identification

12. Chemically, cinnamon can be identified from cassia and other spices of Lauraceae family from the presence of terpenoids and absence of coumarin in cinnamon.
13. The chemical and physical differences between cinnamon and cassia, which are the two major commodities classifiable in heading 09.06, are indicated in detail in the Annex hereto.
14. Furthermore, cinnamon fetches more than four times the price of cassia due to its better aroma characteristics resulting from terpenoids.

Time frame

15. The **Sri Lankan** Administration will be very much grateful if the above proposals are considered during the present review cycle. The Harmonized System Committee is therefore requested to conduct a preliminary study at its next session in November 2003 pending further studies by the Review Sub-Committee at its session in March 2004.
16. Furthermore, in view of the technical nature of the identification methods, it may be appropriate to refer these technical matters to the next Scientific Sub-Committee for its observations.
17. After the above-proposed amendments to the Nomenclature are approved, the **Sri Lankan** Administration could forward a proposal for the consequential amendments to the Explanatory Notes.”

III. SECRETARIAT COMMENTS

18. The **Sri Lanka** Administration has put forward two proposals :
 - (i) to amend the text of heading 09.06, and
 - (ii) to insert two new subheadings in this heading for cinnamon.
19. The Secretariat would first like to draw the Committee's attention to the fact that the proposal was received after the cut-off date set by the Review Sub-Committee at its 27th Session (March/April 2003), i.e., 30 June 2003. It leaves it, therefore, to the Committee to decide whether or not the proposal of the **Sri Lanka** Administration should be taken up during this review cycle.
20. With respect to the actual proposal, the Secretariat would like to offer the following comments.

Heading text

21. At present, the text of heading 09.06 reads “Cinnamon and cinnamon-tree flowers”. The Sri Lanka Administration has proposed to replace this text with “Cinnamon, cassia and other spices from the Lauraceae family and their tree flowers”. According to the Sri Lanka Administration, the term “cinnamon” should only refer to cinnamon of the Sri Lankan type (identical to the Madagascan type and Seychelles type), and not to other types, such as the Chinese type, the Indonesian type and the Vietnamese type which, in the view of the Sri Lanka Administration, are covered by the term “cassia” in the proposal. The intention of the proposal is to clarify the scope of the heading and will, according to the Sri Lanka Administration, not entail any transfer of goods.
22. The Secretariat has no objection with regard to this part of the proposal, although it would suggest inserting a comma after the word “family”, to clarify that the last part refers back to all commodities mentioned before. Its objective is confirmed by the two ISO Standards for Cinnamon and Cassia (ISO 6539 and ISO 6538, respectively), and the Secretariat agrees that the proposed text makes it clearer that “cassia” is classified in heading 09.06. At present “cassia” is only referred to in the Explanatory Note to the heading (first paragraph, on page 75).

New subheadings

23. The Sri Lanka Administration has suggested splitting present subheadings 0906.10 and 0906.20 to provide specifically for cinnamon. Statistical data from the UNSD with respect to these subheadings are reproduced below (HS1996 version) :

(1,000 USD)

	1997	1998	1999	2000
0906.10	124,749	123,667	120,824	100,258
0906.20	18,083	16,445	15,031	16,547

In addition, Sri Lanka can report that its export figures for 2001 and 2002 are US\$ 41.14 and US\$ 42.25 millions, respectively for subheading 0906.10 and US\$ 0.41 and US\$ 0.19 million for subheading 0906.20. Taking into account the low trade figures for subheading 0906.20, the Secretariat wonders whether it would be appropriate to subdivide that subheading.

24. As regards the text of the proposed subheadings, the Secretariat suggests inserting the scientific name (*Cinnamomum zeylanicum Blume*) after “Cinnamon” in the proposed text – as in the ISO standard. A similar insertion should, in the view of the Secretariat, not be necessary in the heading text. The Secretariat’s alternative proposal for current subheading 0906.10 would then read as follows :

- Neither crushed nor ground :

0906.11 -- Cinnamon (*Cinnamomum zeylanicum Blume*)

0906.12 -- Other

IV. CONCLUSION

25. The Sub-Committee is invited to consider whether or not the proposal submitted by the Sri Lanka Administration should be dealt with during the current review cycle and, if so to examine the proposal to amend heading 09.06 as set out in paragraphs 8 and 11 above, taking into account the Secretariat’s comments in paragraphs 18 to 24 above.

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Identification of Cinnamon

1. HISTORICAL PERSPECTIVE

Cinnamon as a spice was known to the world well before the Christian era. Rosengarten (1). It appears to have been used both in China and in the south East Asian region, as a spice and flavouring agent since the earliest times. There are records of trade in the spice originating in Sri Lanka, (then known as Ceylon, Ceylan and Zeylan), in Roman times as well. However even in Biblical times the difference, in the characteristics of the Cinnamon originating in Sri Lanka and the variety originating primarily in China (known even then as Cassia), appears to have been well established. Rosengarten (1), has recorded the references in the Bible as follows :

“Take thou also unto thee principle spices, of pure myrrh five hundred shekels and of sweet cinnamon half so much and of cassia five hundred shekels..... and thou shall make it an oil of Holy ointment... it shall be a Holy anointing oil.....”

Cinnamon was thus one of the ingredients that went to make the oil that was used to anoint the sacred vessels of the tabernacle. But it must be noted that even in those times the Cinnamon originating from Sri Lanka was recognised and established as being of superior quality and greater acceptability than the variety known as Cassia. Ceylon Cinnamon was referred to as “sweet cinnamon”, and clearly distinguished from Cassia. Rosengarten, - the historian in the spice trade - goes on further :

“ It seems quite probable that the Chinese who traded with Ceylon were concerned in the discovery of the valuable qualities of the bark of the Sinhalese tree, similar but superior to the cassia of their own country.....when the Sinhalese product was imported into Europe, its superior character was soon recognised and the spice fetched very high prices”

So even at the time there was a clear, method of distinguishing between the two, perhaps based on physical and sensory evaluation.

Cinnamon from Lanka was always a commodity much valued and in demand as indicated by the story that the Roman emperor Nero in A.D. 66 burned a year's supply of Rome's Cinnamon at the funeral of his queen as a measure of his grief. (1) Truly Cinnamon became a commodity of choice among the maritime nations that vied for world trade superiority at the time.

In time, the Dutch and then the British, were to take over control of the trade, from them. The Dutch governor Falk was responsible for initiating the first cultivation of Cinnamon in Ceylon to enhance their trade in the commodity, which was one of very high price in that era. (3,-6)

2. BOTANICAL AND TAXONOMIC CONSIDERATIONS.

Cinnamomum

The genus belongs to the family LAURACEAE, which is known to contain nearly a hundred species, and sub-species. A taxonomic revision has been suggested by Lawrence (7) who asserts that there could be fewer species if that were accomplished. The primary Cinnamomum species of commercial reckoning, as a spice, are the following :

Cinnamomum zeylanicum = *C. verum*, ie Ceylon cinnamon whose habitat is Sri Lanka, Seychelles and the Malagasy Republic.

Cinnamomum cassia, *C. loureirii*, *C. burmanni*, all known collectively as Cassia. And grown in China and Southeast Asia.

C. obtusifolium, *C. tamala*, and *C. syntok* grown in India

Sri Lanka is the only country where Cinnamon is cultivated on a systematic manner and this commenced with the era of colonisation by the Dutch. (5)

3. CINNAMON - THE SPICE OF COMMERCE

Cinnamon, namely *C. zeylanicum*, and Cassia namely, *C. cassia*, are the Cinnamons that are mainly traded in commerce. Of these the former, the Cinnamon originating in Sri Lanka, and in the past also in the Seychelles, and now to a limited extent in Madagascar, is by far the preferred commodity in the sophisticated markets of Europe where organoleptic assessment is well established. Cassia which is far cheaper, is traded in the United States and in Central America as a commodity used in flavouring of cakes and sweets. However in Mexico, for instance, in recent times the sophisticated tastes and flavour of Cinnamon is finding favour judging by the market interests that now prevail. Cassia, which originates largely in China and the surrounding south East Asian region, is known and identified as Cassia, and in the trade this is rarely confused with Cinnamon, except that it is sometimes referred to as Cinnamon in regions where only Cassia is traded.

Adulteration of the expensive Cinnamon with Cassia when in the powdered form or as the essential oil is however known.

4. PHYSICAL AND MORPHOLOGICAL CHARACTERISTICS.

Distinguishing the commercial product Cinnamon, from Cassia and related species is relatively simple if the product is in the crude unprocessed form. The differences derive from the method of cultivation and harvesting. Cinnamon is genuinely cultivated in Sri Lanka and offered to the market in the form known as "quills". As the Cinnamon is harvested from tender shoots as a result of the method of "coppicing" and the subsequent operations of "peeling", "coiling," and "drying", the quills have their characteristic organoleptic properties, as well as a smooth, tender pale brown appearance. In the Seychelles however the same product is gathered from trees which are grown to adult dimensions, and hence the bark harvested has a coarse appearance, with the flavour which is distinctly less attractive. Cassia is always gathered from adult trees and has both a coarse appearance as well as a diminished sensory quality in which the odour of cinnamaldehyde is dominant. When examined side by side, under the microscope the coarseness of the Cassia becomes more evident, and can be quite easily distinguished morphologically. Pharmacognosic examination alone often will suffice to distinguish between Cinnamon and Cassia.

5. CHEMICAL AND ANALYTICAL FEATURES

The chemical differences between Cinnamon, Cassia and related species are all too obvious (8-11). Cinnamon contains an array of chemical constituents called “**terpenoids**” which are totally absent or present on only trace quantities in Cassias. The presence of these terpenoids give Cinnamon its characteristic flavour profile, and the odour characteristics in particular are greater in Cinnamon. By sensory means as well as by chemical tests it is quite a simple matter to identify the Cinnamon from Sri Lanka as a commodity quite distinct from the Cassias.

The dominant compound of both species is of course “Cinamaldehyde” which belongs to the chemical class known as “phenylpropanoids”. Eugenol, a compound present in the leaves of the Sri Lankan Cinnamon in abundance and in the bark in smaller quantity also belongs to the same chemical class, and is present in both. However, the presence of the terpenoids in Cinnamon only is the main determining difference. The presence of these terpenoids is easily seen by tests using Thin Layer Chromatography (TLC) and Gas-Liquid Chromatography (GLC). In a TLC-gram the Sri Lankan Cinnamon displays an array of colours characteristic of the terpenoids. In a GLC-gram the terpenoids manifest themselves as a series of characteristic peaks. These features are distinctly absent in Cassia and related species. Further Cassia contains the chemical substance known as “coumarin” which fluoresces in *ultra-violet light*, and hence by this means Cassia or adulteration with it can be identified.

The following table summarises the chemical differences outlined above.

TABLE - Senanayake (9,10). Wijesekara et al (8)

CINNAMON	CASSIA
Physical characteristics:	
Smooth texture	Coarse texture
Generally grayish brown	Generally golden brown
Organoleptic Characteristics:	
Gentle flavour with fragrant top notes	Harsh flavour of cinnamaldehyde
Sweet flowery pungency	Sharp roughly pungent taste

Chemical Differences	
Presence of the following terpenoids : Major Monoterpenoids : Alpha-Phellandrene, 1:8 Cineole, p-cymene, Linalool. Major Sesquiterpenoids : Beta-caryophyllene, alpha-humulene, alpha-terpeneol, caryophyllene oxide. Minor-terpenoids : Alpha and beta pinenes, limonene, alpha – ylangene, terpinene-4-ol, piperitone, cuminaldehyde, geraniol. Major aromatic substances : Benzaldehyde, hydrocinnamic acid, 2-phenylethanol	Absence of Terpenoids
Absence of Coumarin	Presence of Coumarin

6. CONCLUDING OBSERVATIONS

It will be clear from the foregoing that it would be a travesty of justice to classify Cinnamon and Cassia in the same category. Clearly as a spice the two are not interchangeable and the status enjoyed by the Cinnamon from Sri Lanka over several millennia as well as the improvements in flavour characteristics brought about by two centuries of agro-cultural practices will be summarily nullified.

If physical imagery is needed a look at the TLC and GLC- grams published herewith will be conclusive. (*These grams will be made available in the meeting room.*)

Cinnamon as from Sri Lanka is employed in the formulations of flavour and fragrance products. In these Cinnamon is specified. The pharmacopoeias also prescribe a variety of products :

- Compound Cinnamon powder BPC. 1949
- Distilled Cinnamon water BPC. 1949
- Concentrated Cinnamon water BPC .1973.
- Tincture Cinnamon BPC .1949
- Aromatic chalk mixture BPC. 1973
- Ammoniated quinine and Cinnamon elixir BPC. 1949

In all of these, Cinnamon and not any other are prescribed.

7. REFERENCES

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