CODEX ALIMENTARIUS COMMISSION

Food and Agriculture Organization of the United Nations

World Health Organization

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JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX COMMITTEE ON FOOD ADDITIVES

Forty-Sixth Session

Hong Kong, China, 17-21 March 2014

PROPOSALS FOR ADDITIONS AND CHANGES TO THE PRIORITY LIST OF FOOD ADDITIVES PROPOSED FOR EVALUATION BY JECFA (REPLIES TO CL 2013/12-FA)

Comments of Sudan and IADSA

SUDAN

Revision of Gum Arabic Standard Specifications

Sudan requests JECFA to revise its decision, in its fifty first meeting 1998, to amalgamate true Gum Arabic from *Acacia senegal* with Gum Talha from *Acacia seyal*, under one common monograph and one INS (414), Sudanese Standards and Metrology Organization SSMO would like to submit the following:

1. JECFA's established practice of assigning a unique INS and separate monograph for each gum used as food additive (e. g Guar INS E 412, Gellan INS E 418, Karaya INS E 416, Xanthan INS E 415) has not been adhered to in the case of Gum Arabic and Gum Talha.
2. JECFA's demand from Sudan since, the late 90th to provide new evidence of differences between the two gums, for it to revise its new decision of their amalgamation in one monograph, is unjustified, considering an already sighted more than sufficient, clear, scientific and proven, wide differences between the two gums.
3. Where as the basic properties of true Acacia senegal gum have been firmly established by considerable research work carried out by several credible research workers and organizations, the toxicity of Acacia seyal gum remains insufficiently, or not at all, investigated. Consequently the established safety of Acacia senegal gum can not be extended automatically to Acacia seyal gum the safety of which has not yet been established.

   As JECFA is mandated to support the highest standards of food safety, consumers expect it to set specifications which reflect the highest purity standards. It is therefore improper for it to include Gum Talha or any other gum from any *Acacia* species that has not been toxicologically tested and approved into the specification of Gum Arabic which is given *ADI not specified* status.
4. Although the new JECFA common monograph for *Acacia senegal* gum and *Acacia seyal* gum gives different specifications of identity and purity, different manufacturing quality and usage patterns, affirms that they are not technologically interchangeable and that the two gums are traded and used as separate commodities with different specifications and prices, JECFA, paradoxically amalgamated the two gums in one monograph and assigned them the same INS (E 414).
5. Gum Arabic, which has been an article of commerce from Sudan for thousands of years Hashab gum and Gum Talha has never been traded under the name Gum Arabic.

It is well established in international trade records and in all official Sudan trade records since colonial times that Gum Talha is a separate commodity, the price of which has never exceeded one third the price of Gum Arabic. Even international gum traders in their gum orders, specifies the type and grade of gum either Gum Arabic or Gum Talha.

However, in spite of all these and other established glaring facts, substantiating distinction between the two gums , the Sudan, with the assistance of the expertise of the Sudanese Standards and Metrology Organization (SSMO), The National Forest Corporation and Sudan University of Science and Technology, herewith endeavor to accord with the requirements of JECFA's fifty first report by providing the following for it to revise its amalgamation of the gums under one common monograph and same INS:

I. Taxonomists specialized in the complexity of the genus *Acacia*, including Bentham, Vassal and Redley, reported that *Acacia senegal* and *Acacia seyal* are not closely related species. The significant difference, in botanical sources, is strongly reflected in differences between the gums derived from the two different trees. These differences became more evident from the Smith degradation studies undertaken by Anderson and his co-workers [1] since the sixties of the last century. They were based on the detailed chemical analysis of the degraded gum products and were used to support the taxonomic classifications already established as well as to provide some model for the detailed molecular structure of these gums.

II. Recently physico-chemical [2] and immunological [3] studies were undertaken by a number of researchers providing concrete evidence to the significant differences between the two gums. The superior techniques used in these studies made it possible to identity differences at the molecular level allowing for comparing, contrasting and identifying major differences between *Acacia* gums derived from different botanical sources [part I, part II]. These findings are summarized in the following points:

(a) The average molecular weight is much greater for Gum Talha compared to Gum Arabic.

(b) There is a completely different distribution and proportions of molecular fractions obtained by Gel Permeation Chromatography fraction of the two

(c) gums, particularly the high molecular weight component, where in Gum Arabic, there is a much lower proportion of it compared to that in Gum Talha. The weight average molecular of Gum Talha is at least three times that of Gum Arabic.

(d) The protein distribution in Gum Talha is different from that in Gum Arabic. Where as it is exclusively associated with the high molecular weight component (AGP) in Gum Arabic, it is distributed between the molecular weight fractions and the lower molecular weight component in Gum Talha, a matter that influences its functional performance.[part III] Ref 4.

(e) The relative average root mean square radii of gyration (Rg) of the two gum molecules are 25.7 nm for Gum Talha and 33.1 nm for Gum Arabic. Thus the molecular size ratio of Gum Talha to Gum Arabic is 0.77:1. Indicates that the intrinsic viscosity of Gum Arabic is greater than Gum Talha. [part III].

The proportions of sugar of the two gums are different, Gum Arabic possesses negative specific optical rotation ranging from -22 to -34, Gum Talha possesses positive specific optical rotation ranging from +45 to +60.[part III]

It is unjustified to use the general terms leavo and dextro to describe the specific optical rotation without any limits. It is of course unacceptable to describe *Acacia polyacantha* , or *Acacia mellirfera* which have leavo optical rotation as gum arabic nor it is possible to deserible *Acacia siebriana* , *Acacia tortilis* or *Acacia nilotica* which possess dextro specific optical rotation as *Acacia seyal.* Simply because specific optical rotation is a finger print test to differentiate between these gums, which is used by all, international, traders as an in house test to prove the identity of gum consignments.

These wide differences render the two gums to have different functional properties; hence they are not technologically interchangeable as claimed and clearly stated in the JECFA's monograph for Gum Arabic.

It is sincerely hoped that this presentation fully satisfies JECFA's requirement to revise Gum Arabic specification, which is herewith requested by Sudan, decision (in its fifty first meeting in 1998) to amalgamate, in one common monograph and under one INS (E 414), the two completely different - (in origin, identity and quality) - gums, the unique Hashab/ Kordofan true Gum Arabic and the red and white Gum Talha, an amalgamation decision that seriously affects the whole Gum Arabic culture, industry and trade grievously hurts the tree and its environment, in addition, the commodity and its producers and end users, in addition to aggravating the country's fragile, arid, desertified tropical environment, poverty, unemployment and food insecurity.

It is of great concern to us the serious consequences of amalgamating the specifications of two different gums into one as this will pave the way widely for adulteration mixing of the two different gums, and make difficult of SSMO to implement different specifications of Gum Arabic (*Acacia senegal*) and Gum Talha (*Acacia seyal*).

In conclusion, the Sudan raise this request to JECFA for revision of its conjoint Gum Arabic monograph, confident of its early due consideration, in the light of its credibility as the world's food quality standards custodian, an honest broker between producer and customer and a trusted adviser to the end user.

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3. S. **Al**-**Assaf**, G, O. **Phillips**, P.A. **Williams** (2005), Studies on Acacia exudate gums.

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INTERNATIONAL ALLIANCE OF DIETARY/FOOD SUPPLEMENT ASSOCIATIONS (IADSA)

INS 470(iii) Magnesium Stearate

In view of the 46th Session of the CCFA on 17-21 March 2014 and discussions to be held in relation to proposals for additions and changes to the priority list of food additives proposed for evaluation by JECFA, the International Alliance of Dietary/Food Supplement Associations (IADSA) wishes to take the opportunity to submit comments for the food additive Magnesium Stearate added to the priority list of compounds that had been proposed for assessment by JECFA at the 45th meeting of the CCFA in 2013.

Magnesium stearate has for over 80 years been an essential technological additive for the production of food supplement and confectionery compressed tablets. It has become the additive of choice by tablet manufacturers world-wide and it has been estimated that it is used in over 70% of all food supplement tablets produced and in a similarly high percentage of confectionery tablets. It is also an important additive for the chewing gum industry. Over the years, a number of alternative substances have been tried but none appears to function as effectively as magnesium stearate.

Under the Codex procedure, magnesium stearate had been assigned a new INS number, INS 470(iii). At the 45th meeting of the CCFA in 2013 magnesium stearate was added to the priority list of compounds proposed for assessment by JECFA. The deadline for submission of the data for evaluation was November 2013. However, due to the number of requests for scientific advice received and resources available, it was not possible for JECFA to schedule the evaluation of Magnesium Stearate for the 79th JECFA meeting, therefore the compound has not been included in the call for data.

The dossier of data on magnesium stearate is completed and ready for assessment as soon as it is requested by JECFA. It is believed to be a strong dossier, with good quality data on all the elements required for a thorough safety review.

Owing to magnesium stearate's global importance in food supplement tablets, confectionery tablets and chewing gum, it is essential that this additive undergo an assessment by JECFA as soon as possible, to enable its re-addition to the GSFA before any barrier to trade is created by its current omission. For this reason, IADSA would welcome if magnesium stearate could be raised to a level of 'high priority' at the 46th meeting of CCFA on the priority list of compounds for assessment by JECFA.