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CODEX COMMITTEE ON SUGARS

REPORT OF 3RD MEETING 1ST - 3RD MARCH, 1966

1. The Codex Committee on Sugars held its third meeting from 1st to 3rd March 1966 in London, under the chairmanship of Mr. J.H.V. Davies of the United Kingdom. The meeting was attended by 42 delegates and observers from 13 Governments and 5 International Organisations. A list of those participating is attached at Appendix I. (Omitted)

2. The Committee took note of the developments at the Third Session of the Codex Alimentarius Commission concerning the draft standards elaborated at the previous meetings of the Committee. The Committee decided to bear in mind the decisions of the Codex Alimentarius Commission on the General Principles of the Codex Alimentarius, as set out in Appendix III to the Report of the Third Session, when giving further consideration to the standards for carbohydrate sweetening matters.

Definition of "Sugars" and "Sugar"

3. A number of delegations requested that the term 'carbohydrate sweeteners' should be more closely defined in order to exclude such substances as saccharin and cyclamates. The Committee agreed that only carbohydrate sweetening matters should be described as sugars and further that the use of the term 'sugar' in the singular and unqualified should be confined to sucrose (saccharose) only. Lactose

4. The Committee considered the draft standard for Lactose in the light of the comments received under Step 3 and of a paper (CODEX / SUGARS/ ENGLISH/ 19) submitted at the meeting by the delegation of the United States proposing a return to two standards. The Committee agreed to continue its work on this product on the basis of a single Codex standard on the understanding that there would be a further opportunity under the Codex procedure to elaborate a second standard, if this were thought necessary.

5. The Committee discussed details of the content of the draft standard and agreed to make some revisions including the provision of a definition for lactose. The revised standard is set out in Appendix II, The delegation of the United States considered that proposed maximum limit for sulphated ash was too low and that the figure should be increased to 0.3% maximum.

6. In view of the comments received from Member Governments the Committee agreed that it was unnecessary to make provision either for a maximum limit for phosphates or a qualitative or quantitative test for protein. It was agreed to submit the proposed draft provisional standard at Appendix II to the Codex Alimentarius Commission for adoption at its next Session as a draft provisional standard.

#### Fructose

7. The Committee agreed not to proceed further with the elaboration of a standard for Fructose in view of the small quantity at present passing in international trade. They decided to refer this matter to the European Codex Committee on Dietetic Foods to consider whether a standard for Fructose was necessary from the point of view of dietetic foods and, if so, whether it considered that the Codex Committee on Sugars should undertake the further work on it.

#### White Sugar

8. Following the decision of the Codex Alimentarius Commission at its Third Session, the Committee further considered the draft standard elaborated at its second meeting. The Committee had before it the following documents:-

- CODEX/SUGARS/ENGLISH 12- Getting out the position on standards for white sugar up to the Third Session of the Commission including proposals submitted to the Commission by the United Kingdom proposing a return to two standards, and proposals by the Republic of China for two standards.
- CODEX/SUGARS/ENGLISH/14- summarising the information supplied by member governments on the result of colour analyses.
- CODEX/SUGARS/ENGLISH/15- report of an international sugar survey undertaken by the United Kingdom.
- CODEX/SUGARS/ENGLISH/16- further proposals by the United Kingdom for the elaboration of three standards for white sugar.
- CODEX/SUGARS/ENGLISH/20- a paper by the delegation of Denmark circulated at the meeting summarising the various proposals to date with the addition of a Danish proposal.
- CODEX/SUGARS/ENGLISH/21- a paper by the delegation of the Federal Republic of Germany circulated at the meeting comparing colour determinations under ICUMSA method 1A by Beckmann, Leitz and Zeiss Elko II spectrophotometers and evaluating the quality of sugars referred to in the United Kingdom survey.

9. A majority of delegations agreed that there was a need for more than one standard and the Committee decided to proceed with the elaboration of three standards without specifying, for the present, what names should be used. In view of the importance of the question and of differences of opinion on value of certain of the criteria

for white sugar, the Committee agreed that the best course would be to consider the proposals on a tentative basis and to seek the further views of member governments before submitting the standards to the Codex Alimentarius Commission at Step 5 of the procedure for elaborating worldwide standards.

10. The following points emerged from the Committee's detailed discussion on the analytical criteria in the various proposals:-

- (a) Polarisation. Some delegations expressed doubts about the value of polarisation as a criterion of quality and particularly as a means of distinguishing between three different grades of white sugar.
- (b) Invert Sugar. Some delegations favoured a maximum limit of 0.1% for the three standards. Of the other delegations which favoured separate limits for each standard one delegation considered that the tentative figure of 0.15% in the third standard was too high.
- (c) Sulphated Ash. Some delegations expressed the view that conductivity ash was a better measure of the inorganic impurities and should be included in the draft standard instead of sulphated ash. The Committee noted that, at its forthcoming meeting in May, ICUMSA would be considering this matter.
- (d) Moisture. The Committee agreed that "loss on drying" was a more accurate description and that this term should be used in place of moisture. The delegation of France expressed the view that it would be difficult to conform to the proposed limits in the production of some types of sugar.
- (e) Colour. The Committee agreed that the proposed limits would need to be further considered after the conclusions of ICUMSA on its colour study were available following its next meeting in May.
- (f) Insoluble Matter. The delegation of the Federal Republic of Germany considered that insoluble matter was not a good criterion for sugar quality and drew attention to the results of the U.K. survey which indicated that many sugars would not qualify for inclusion in the first two standards solely on the grounds of their high content of insoluble matter. The majority of delegations considered that insoluble matter was a significant factor. The Committee agreed that, for the time being, the figures proposed by the delegation of Denmark (20 p.p.m - No. 1, 30 p.p.m. - No. 2 and 50 p.p.m - No. 3) should be included and that governments should be asked particularly to comment on the question whether the same limit should apply to all three standards.
- (g) Sulphur Dioxide. The Committee decided to reduce the maximum limit for "sulphur dioxide in all three standards to 5 p.p.m. In recommending this limit as the minimum technologically appropriate, the Committee also agreed to draw the attention of the Codex Committee on Food Additives to the fact that in the case of the proposed third category of white sugar it might be technologically impossible to achieve such a low limit under certain methods of production.

11. Proposals for the analytical criteria to be included in the three draft standards are set out in Appendix III. It was agreed that these proposals should be set out by the United Kingdom Secretariat in a paper which would be circulated as soon as possible to member governments and interested international organisations for comment. The paper would include a summary of the arguments put forward at the meeting and the reasons

why the various criteria had been included. It would also indicate where further study was required on the question of a satisfactory method of determination. The Committee agreed to reconsider the standard at its next meeting at Step 4 of the procedure for elaborating Codex Standards.

12. In discussing the importance and significance of the various analytical criteria to be included in the white sugar standards, the Committee took note of a statement by the delegation of the Federal Republic of Germany concerning the method used by the Braunschweig Sugar Institute to differentiate between qualities of white sugar. The method involved a compensatory points system based on three main factors - the degree of whiteness, colour and turbidity of the sugar solution and the level of impurities as measured by the ash content. At the request of the Committee, the delegation of the Federal Republic of Germany undertook to prepare a paper on this matter as soon as possible for consideration at the next meeting.

#### Methods of Analysis and Sampling

13. The Committee received a verbal progress report from the representative of ICUMSA on those matters which the Committee had referred to ICUMSA at its second meeting. It was noted that formal replies to the Committee's requests could be expected after the meeting of ICUMSA in May, 1966. The Committee also noted that the following meeting of ICUMSA was not scheduled to be held until 1970 and it was agreed that the U.K. Secretariat should write to ICUMSA stressing the importance the Committee attached to the work being carried out by ICUMSA and the urgency of securing agreement on methods of analysis as soon as possible.

14. The Committee considered the paper (CODEX/SUGARS/ENGLISH/13) prepared by the U.K. Secretariat setting out references to the current international position on sampling procedures and methods of analysis and agreed that, subject to the comments of ICUMSA, the suggested methods and procedures - as qualified or amended during the discussion - should be referred to the Codex Committee on Methods of Analysis and Sampling. The following points arose during the discussions-

- (a) Paragraph 7. Doubts were expressed about whether the procedure suggested in this paragraph could apply to paper bags and it was agreed to seek the advice of ICUMSA on this point.
- (b) Paragraph 9. The minimum size of the pooled sample should be amended to 2kg.
- (c) Paragraph 13.
  - (i) It was agreed to seek the views of ICUMSA whether the stipulated sucrose content should be obtained direct i.e. by polarisation or indirectly, i.e. subtracting the amount of impurities from 100.
  - (ii) Some delegations pointed out that the conductivity method for sulphated ash was more widely used in preference to the suggested double sulphation method. It was noted that the conductivity method had only been tentatively approved by ICUMSA and that a final decision on this was expected in May. It was agreed to seek the views of ICUMSA on this point.
- (d) Paragraph 15. The following amendments were agreed:-  
Total Solids - Reference C.I.R.F. Method E - 54

Sulphated Ash - Reference Ic.M. p. 100 - Single sulphation.

(e) Paragraph 16.

The following amendments were agreed :-

Dextrose - Reference Ic.M. p. 101, Lane & Eynon titration.

Total Solids - Reference Ic.M.p. 113 Drying at 100°C for 4 hours under reduced pressure.

Sulphated Ash - Reference Ic.M.p. 100 - Single sulphation.

15. The representative of ISO drew attention to the work on methods of analysis being undertaken by ISO Technical Committee 93 dealing with Starch and its derivatives, much of which was well advanced. It was agreed that it should be taken into account in referring the paper to the Codex Committee on Methods of Analysis and Sampling. The Committee also agreed that, in addition to seeking the views of ICUMSA on the specific points raised in discussion, ICUMSA should be asked (i) to advise on what methods they were prepared to recommend on a tentative basis for determining the analytical criteria referred to in the draft standards and (ii) what degree of accuracy they considered the methods so recommended to have. The Committee considered that it was essential to have standardised methods even though these were not perfect and even if they were only recommended on a tentative basis.

#### Health and Hygiene Aspects of Sugars

16. The Committee considered the paper prepared by the U.K. Secretariat and concluded that there was no special problem concerning sugars which necessitated any special filth or other tests over and above those which the Codex Committee on Food Hygiene might apply generally to all foods. It was agreed that this view should be conveyed to the Codex Committee on Food Hygiene together with a suitably amended copy of the Secretariat paper.

#### Other Matters arising from the Second Meeting

17. The Committee took note of the further information, requested at its second meeting, which had been supplied on sulphur dioxide in dried glucose syrup and copper limits in soft and brown sugars, glucose syrup and dried glucose syrup. It was agreed that the information should be considered further at the next meeting of the Committee when the standards for these products were considered at Step 7.

#### Future work

18. The Committee re-affirmed the view expressed at its second meeting that there was no need at present to elaborate standards for any other type of carbohydrate sweetening matter. The Committee noted that the major items to be dealt with at its 1967 meeting would probably be further consideration of the white sugar standards at Step 4 and consideration of the provisional draft standards for soft and brown sugars, glucose syrup, dried glucose syrup, dextrose monohydrate and dextrose anhydrous at Step 7. The Committee recognized that its work would be greatly facilitated if, on the assumption that the proposed draft provisional standard for lactose was approved by the Codex Alimentarius Commission at Step 5 at its fourth Session in November, 1966, the standard could be immediately circulated to governments for comment at Step 6 so that it might be considered at Step 7 by the Committee at its fourth meeting in 1967. It recommended that whatever action was possible to bring this about should be taken.

LACTOSE

Definition

Lactose is the carbohydrate normally obtained from whey. It may be anhydrous or contain one molecule of water of hydration.

Analytical Criteria

Lactose monohydrate	99.0% min.
Sulphated Ash	0.1% max.
Free moisture	0.4% max. *
pH (10% solution)	4.5 - 5.5
Extraneous Insoluble Matter	1 p.p.m. max. *

\* Tentative figures subject to further consideration after agreement on satisfactory methods of determination.

Additional Notes

1. Sulphur Dioxide

No sulphur dioxide should be added to Lactose.

2. Heavy Metals

The limits for Arsenic, Lead and Copper in Lactose should fall within any overall limits specified for all foods by the Codex Committee on Food Additives. The following limits are put forward as technologically suitable:

Arsenic (As)	1 p.p.m. max.
Lead (Pb)	2 p.p.n. max.
Copper (Cu)	2 p.p.n. max.

APPENDIX III

DRAFT STANDARDS FOR WHITE SUGAR

	<u>No. 1</u>	<u>No. 2</u>	<u>No. 3</u>
Polarisation (minimum)	99.9%	99.7%	99.5%
Invert Sugar (maximum)	0.02%	0.04%	0.15%
Sulphated Ash (maximum)	0.02%	0.04%	0.15%
Colour (Icumsa Units - maximum)	25	60	200
Loss on Drying (3 hours at 105°C) (maximum)	0.09%	0.1%	0.15%
Insoluble Matter (maximum)	20 p.p.m.	30 p.p.m.	50 p.p.m.
SO <sub>2</sub> (maximum)*	5 p.p.m.	5 p.p.m.	5 p.p.m.

Note: All figures are tentative subject to further consideration of comments received from Member Governments and to agreement on satisfactory methods of determination.

\* This limit would be subject to ratification by the Codex Committee on Food Additives.

Heavy Metals The limits for Arsenic, Lead and Copper in white sugar should fall within any overall limits specified for all foods by the Codex Committee on Food Additives. The following limits are put forward as technologically suitable;

	<u>No. 1</u>	<u>No. 2</u>	<u>No. 3</u>
Arsenic (As)	1 p.p.m.max.	1 p.p.m.max.	1 p.p.m.max.
Lead (Pb)	2 p.p.m.max.	2 p.p.m.max.	2 p.p.m.max.
Copper (Cu)	1 p.p.m.max.	2 p.p.m.max.	2 p.p.m.max.