

CODEX ALIMENTARIUS COMMISSION



Food and Agriculture
Organization of the
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World Health
Organization

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Agenda Item 7a

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JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX COMMITTEE ON FOOD ADDITIVES

Forty-eighth Session

Xi'an, China, 14-18 March 2016

PROPOSALS FOR ADDITIONS AND CHANGES TO THE PRIORITY LIST OF SUBSTANCES PROPOSED FOR EVALUATION BY JECFA

Comments (replies to CL 2015/11-FA) of South Sudan and ISDI

SOUTH SUDAN

South Sudan endorsed and support most of the suggested work on the agenda except as for clarification on Gum Arabic. Priority List of substances proposed for evaluation by JECFA, chaired by Canada, to consider: proposals for additions and changes to the Priority List

absence of safety concern , full safety assessment and establishment of specifications.

the current specification for gum Arabic (INS 414) would remain valid

no new data available nt.

INTERNATIONAL SPECIAL DIETARY FOODS INDUSTRIES (ISDI)

Introduction

ISDI responded to CL 2015/11-FA with a proposal for a JECFA priority evaluation of gellan gum (INS 418) as a stabilizer up to 100 mg/kg as consumed, in food category 13.1, infant formula, formula for special medical purposes and follow-up formula. ISDI, through this conference room document (CRD), provides the technological justification pertaining to the use of gellan gum.

Technological Justification

Stabilizers emulsions

Gellan Gum acts as a stabilizer in ready-to-feed infant formula, or concentrated liquid products to improve physical stability through mechanisms such as maintaining homogeneity or minimizing ingredient sedimentation. Gellan Gum acts as a thickening or gelling agent through formation of a fluid gel. The fluid gel can aid with the sedimentation of dense components such as insoluble calcium and phosphorus salts. The gelation also provides a secondary benefit of thickening the solution viscosity, slowing the upward migration of fat, which is less dense. Gellan Gum stabilizes the emulsion of protein, fat and water created in the infant formula manufacturing process, minimizing phase separation during storage, display and feeding. Without an ingredient added for stabilization, infant formula would be more likely to produce insoluble sediments or creaming (separation of fat). This technical effect is particularly important to ensure infant formula is uniform and delivers the appropriate level of all essential nutrients. Use of product that is not properly stabilized will result in suboptimal delivery of nutrients to an infant, and long-term use could result in nutrient deficiency. Infant formula products can uniquely benefit from these multifunctional properties of gellan gum.

Homogeneity

Failure to suspend the insoluble components of formula correctly could lead to a non-homogeneous formulation or sedimentation to the bottom of the container. This can result in the sub-optimal delivery of minerals such as calcium and phosphorous. The sedimentation of minerals is further aggravated when they harden into non-dispersible, compacted sediment which can then lead to undesirable product appearance. The use of gellan gum offers a unique solution to this sediment problem by allowing for ease in re-dispersion

and preventing formation of non-dispersible sediment. Gellan Gum uniquely helps to produce a smooth pourable liquid that is not too thick or thin during processing, storage or feeding.

Hydrolyzed proteins

The need for stabilization is particularly important in infant formulas that contain hydrolyzed proteins. Hydrolyzed proteins are often beneficial for infants who do not tolerate or have allergies to cow milk or soy protein—this can be critical for infants with certain gastrointestinal problems or other conditions. To manufacture the hydrolyzed protein product without gellan gum would make it extremely challenging. Gellan Gum produces a unique technical effect to ensure these products are stabilized.

Advantages

Gellan Gum is cold or hot water-soluble, which allows for advantageous flexibility of addition for manufacturing applications. It also has good thermal and acid stability. Full hydration of the gum occurs during thermal processing temperatures used in infant formula ensuring desired effectivity of the stabilizer. The elasticity of the gel obtained from gellan gum is adjustable based on presence of ions, pH, or temperature. Therefore, gellan gum can be adapted to improve the physical stability of a variety of nutritionally complete, low viscosity formulas. Another benefit of gellan gum is that it does not influence the efficacy of the other components, particularly the vitamins and minerals in the formulation. Thus, gellan gum is compatible with formulation processing, allowing the minimum undesirable impact on the ingredients and during subsequent storage.

Self-limiting conditions of use

Gellan Gum demonstrates the efficiency to stabilize infant formula, particularly at utilization of lower concentrations in comparison to alternative stabilizers. The lowest levels required to achieve the technical effect will depend on the specific formula used. In manufacturing certain formulations, a low viscosity is preferred so that the product can easily flow when pumped or commercially sterilized. This will reduce the amount of heat the product is exposed to, which allows for retention of desirable quality attributes and in such cases, gellan gum serves as the perfect stabilizer.