

TECH NEED

Seeking Chocolate And Fat-Based Filling Mouthfeel Modification Solutions



KEY INFORMATION

TECHNOLOGY CATEGORY:

Foods - Ingredients

Foods - Processes

TECHNOLOGY READINESS LEVEL (TRL): **TRL5 TO TRL9**

COUNTRY: **SINGAPORE**

ID NUMBER: **TN174342**

BACKGROUND/DESCRIPTION

A significant challenge in product reformulation to achieve reduced sugar/fat/calorie content in chocolate and fat-based fillings is mouthfeel.

Chocolate and fat-based fillings are suspensions of finely ground particles (e.g. sugar, milk powders, cocoa powder) in a continuous fat phase (e.g. cocoa butter and/or other vegetable fats). Standard chocolate and fat-based fillings have a continuous fat phase content of 27 – 32% (by weight) with the remaining 73 – 68% being finely ground particulates.

When chocolate or fat-based filling is chewed, the solid fat phase is physically broken down by the teeth and begins to melt and mix with saliva. In standard chocolate, the concentration of the particles (i.e. the extent of interaction with oral surfaces) and the properties of the particles (solubility, water binding/absorbing etc.) result in the classic chocolate texture.

If fat content is reduced, the relative proportion of the particle phase will increase, therefore leading to a greater extent of particle interaction with oral surfaces, and typically a harder texture, more crumbly texture and dryer/powdery mouth feel.

If sugar content is reduced, and replaced with an alternative particle (e.g. soluble and/or insoluble fibre), then although the concentration of particles may not increase, the fibres will have a greater, negative textural impact. For example, they can mix with saliva and become sticky and due to low solubility, can be perceived as rough or powdery.

If both fat reduction and sugar reduction are attempted simultaneously, then both issues are present.

TECHNOLOGY SPECIFICATION

The solutions sought should meet the following specifications:

- Identify dry, particulate ingredients (or dry ingredients that can be ground/milled to a particle state) that can be used to replace granular sugar, in a chocolate/fat-based filling system that do not cause the above mouthfeel issues. Ideally, they would have in-mouth behaviour similar to sugar.
- Identify ingredient technologies that can counteract such negative mouth feel attributes. For example, if soluble fibre particles are preferred from a nutritional perspective, but due to their water binding properties they cause the chocolate to become sticky in the mouth, then what is sought is a technology to reduce the water binding properties of soluble fibres to improve the application potential of soluble fibres
- Present research capability and expertise in the area of food mouth feel modification

PREFERRED BUSINESS MODEL

- Business Collaboration (Joint Venture, Distribution)
- IP Acquisition
- Licensing
- R&D Collaboration