Summary of Discussions on Session G

Vegetable Proteins in Confectionery Products

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Only vegetable protein products now being used in confectionery products are from soy. About 2.5% soy flour can be used in caramel because the flavor of caramel masks any flavor of the soy flour.

It was emphasized that modified soy proteins that have excellent whipping characteristics do not tolerate the presence of many emulsifiers or much animal or vegetable fat. Thus, the soy-whipping agent (enzymatically modified soy protein) is used in low fat products, such as yogurts and meringues (particularly of the soft type where only a slight browning of the meringue is needed). All whipping agents produced by enzymatic hydrolysis have a bitter flavor and caution is recommended in their use in bland food products. Wheat protein-derived products appear to work somewhat better in certain European candies than does casein. Textured soy products coated with lecithin can serve as a nut replacement. About 10% lecithin is needed, and the lecithin protects the textured product from absorbing water from the candy or other confectionery filling. For example, a hazel nut replacement in candy and as a topping for ice cream products has been made that remains crunchy over extended periods.

In marshmallows the modified vegetable protein products can replace some of the gelatin. This is usually an economic advantage. Better shelf life is achieved primarily because the marshmallows do not develop as much rubbery characteristic on prolonged storage. Extruded marshmallows containing modified vegetable proteins have excellent shelf life and softeness. No dramatic breakthrough in improvement of modified proteins for whipping agents is now available. Research into the basic nature of the protein fractions including possibly ones which are not bitter and still effective may lead to better products. This work is necessarily long term. Whipping agents are now easier to make than to market. Use of whipping agents in chewing gum bases was unknown to the panel members despite a U.S. patent on this use. Certain dry mixes containing whipping agents are available for beverage use, such as orange drinks, whiskey sours and manhattans. A combination of a dry mix with a carbonated drink is a dessert novelty. The dry powder is mixed at the table in the carbonated drink to give a final product having a viscous gel-like structure that is aerated with the carbonation.