

褐色フラボノイド系着色料の分別試験の検討

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Study of discrimination among natural brown colorants so-called flavonoid type

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Abstract

Cacao, persimmon, kaoliang, onion, tamarind and chicory colors are natural brown colorants which are so-called flavonoid type, but the structures of their major coloring components remain unclear. Since they have similar coloring characteristics, it is difficult to discriminate each other. In this paper, we develop discrimination analysis among the six colorants mentioned above and caramel color.

Test samples were provided from eight manufactures of their natural brown colorants and Japan Caramel Industrial Association. The discrimination study was performed focusing on the following color reactions, UV measurements and detection of several specific components containing the seven colorants: vanillin reagent reaction (qualitative analysis), HPLC-UV detection of 5-hydroxymethylfurfural (5-HMF), GC-FID detection of 4-methylimidazol (4-Mel), UV absorbance of hydrolysate by hydrochloric acid in butanol, HPLC-UV detection of theobromine, iron (II) sulfate reagent reaction (qualitative analysis), UV absorbance of supernatant of 80% ethanol solution and detection of sulfur dioxide. The results revealed that combination of these eight tests enable us to discriminate the seven colorants.

Keywords : 褐色、フラボノイド、着色料、分別試験、食品添加物

brown, flavonoid, colorant, discrimination method, food additive

I 緒言

本研究は、第4版「既存添加物自主規格」((一社) 日本

食品添加物協会 編集・発行) に設定されている褐色フラボノイド系着色料(カカオ色素、カキ色素、クーロー色素、コウリヤン色素、シアナット色素、タマネギ色素、タマリンド色