MDPI

Extended Abstract

Flavor Profile for Fusel Oil Pyrazines [†]

Catalin Bilbie [1,*], Andra Ghizdareanu [1,2,*] and Cristian Fieru [1,3]

[1] Expergo Business Network SRL, Radu Calomfirescu 6, 3rd District, 030216 Bucharest, Romania; cristian@expergo.ro

[2] The Faculty of Material Science and Engineering, Politehnica University of Bucharest, 6th District, 060042 Bucharest, Romania

[3] The Faculty of Biotechnical Systems Engineering, Politehnica University of Bucharest, 6th District, 060042 Bucharest, Romania

[*] Correspondence: catalin@expergo.ro (C.B); andra@expergo.ro (A.G.)

[†] Presented at the 15th International Symposium "Priorities of Chemistry for a Sustainable Development" PRIOCHEM, Bucharest, Romania, 30th October–1st November 2019.

Keywords: sensory analysis; flavor profile; pyrazines

The aim of the research was to identify the flavor profile and the sensory performance in food matrix applications of new natural flavors extracted from food industry residue (fusel oils). The pyrazine samples were obtained through innovative eco-friendly technology (supported liquid membrane—SML) with one or more organic solvents.

The method used to identify the flavor profile of pyrazines was according to ISO 6564 (Sensory analysis—Methodology-Flavor profile methods). A panel of four experts trained according with ISO 8586 in two stages (several training sessions) using reference substances evaluated the intensity of flavor using a spider diagram, which was based on eight sensory descriptors (coffee, cocoa, chocolate, nutty, sweet, vegetable, potato, roasted meat). In the first stage, they were trained on food flavors with monodimensional profile (cocoa, chocolate, coffee, and nutty) to familiarize themselves with these kind of flavors. In the second stage the training was done using three types of mixtures with commercial pyrazines with multidimensional profile. The food matrix (filling cream) was selected and prepared in such way as to be neutral in terms of smell and taste, and blended with the pyrazines samples. Seven samples of pyrazines and the food matrix were analyzed by conducting a survey with this type of diagram.

For these samples, we had identified two levels of the profile (the main level—with the highest intensity of the descriptors, and the second one—with low intensity of the descriptors). Four samples with a flavor profile above the average intensity of the descriptors, ≥3, were selected to be mixed with the food matrix.

The new natural flavors (from a mixture of pyrazines) obtained through SML technology had developed a sensory profile characterized by two descriptors (cocoa and chocolate). These new natural flavors contributed at the improvement of food products sensory performance.