

Quality of Frying Oils in Fast Food Restaurants in Vienna

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41 samples of used deep frying fats and oils from restaurants and fast food outlets were collected by food health inspectors in Vienna. The aim of this work was to examine the quality of these fats and oils. In our laboratory we determined the content of polar compounds and polymerized triglycerides, acid value, peroxide value, smoke point, anisidine value and the fatty acids incl. trans fatty acids.

16 of these fats and oils were subjected by a sensory analysis. The samples were classified in groups with different amounts of polymerized triglycerides. A qualitative data analysis was conducted to detect all sensory attributes of visual structure and odor to show up their differences in intensity and at least to classify in grades of quality. Over two days, a panel of 10 skilled persons estimated 8 samples of frying fats a day. The sensory profiles of the samples were statistically evaluated and we sought for correlations between the sensory attributes themselves and also correlations to other analytical parameters we determined.

Relation coefficients between the analysed parameters were calculated and examined for their suitability for an official food control laboratory. 3 samples exceeded the Austrian limit of 27 % polar compounds and contained more than 13 % polymerized triglycerides. We could not find any correlation to acid value and peroxide value in these samples. Anisidine value was between 1 and 174 and smoke point ranged from 186 to 243 °C.

With regard to the discussion about regulation of the content of trans fatty acids in foods in Austria, we present the data of these deep frying fats and oils. Only 3 samples out of 41 contain high levels of trans fatty acids. This is in contrast to deep frying fats for the bakery production where the percentage of fats with high trans fatty acid levels is much higher.