Abstract

New blends of frying vegetable oils

WE investigated a new frying oil blend, which in practical tests, “deep frying” and ”pan frying” operations, showed improved thermo-oxidative stability, compared to other available frying oils.
The “deep frying” process involved 15 to 30 frying cycles with a heating time of 8 and 16 h.

The “pan frying” operation was carried out through 10 to 20 frying cycles, with a heating time of 5 and 9 h.

The results of the comparative tests, with our new oil blend and the other frying oils from the market, showed that the suggested new blend underwent less thermal degradation.

Polar compounds, a global figure of the level of new structures arising from thermal treatments, show values in “deep frying” as well as in “pan frying” 50% below than other three reference oils.

Indeed, the results of the quick thermo-oxidative tests (Rancimat) showed good oxidative stability after 15 and 30 frying cycles, which were 6 to 10 time better than the reference oils.

The improved frying behaviour of our blend and its heat resistance has to be related to its specific fatty acid composition with an high level of mono-unsaturated oils, in synergy with specific anti-oxydant structures present in the unsaponifiable matter of the product.

Pomace oil (OS) is particularly rich in Δ5 and Δ7 sterols (avenasterol) and 4-methyl sterols. Double fractionated palm olein (OP), contains tocopherols and tocotrienols; high oleic sunflower (HOSO) shows a deep monounsaturated fatty acid value; sesame (SO), as well known, is rich in triterpenes as sesamolin, sesamol and sesaminol. Finally, rosemary liposoluble extract improves stability of the blend with its phenolic acid derived antioxydant structures as carnosic acid, carnosol and rosmanol.

Sensory, organoleptic and rheological characteristics of food fried in our oil blend was also judged superior and more attractive compared to the reference one.

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