PEKTOS AG
Know-How & Experience

Sugar Beet Fiber
makes better coatings

A study concluded that a small addition of sugar beet fiber to coating mixtures significantly decreases oil-uptake in deep-fried products. Water loss from the fried meat is reduced with improved texture as result. This gives added value in terms of lower costs for the manufacturer, improved quality and a reduction of the finished product's energy value.

Benefits

- Significant reduction in oil uptake
- Cost efficient
- Calorie reduction
- Freeze-thaw stable
- E-number, allergen and GMO free

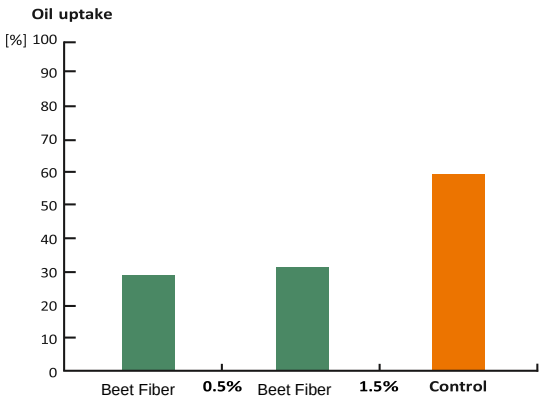
Summary

The study was performed on deep-fried chicken breast pieces. With 0.5% sugar beet fiber (e.g. PEKTOS BEET FIBER BF 5 E) in the mix, the coating mixture absorbed only half the amount of oil compared to the control sample. It is also concluded from this study that the addition of sugar beet fiber has a positive influence on textural properties of the meat, as well as the known health benefits.

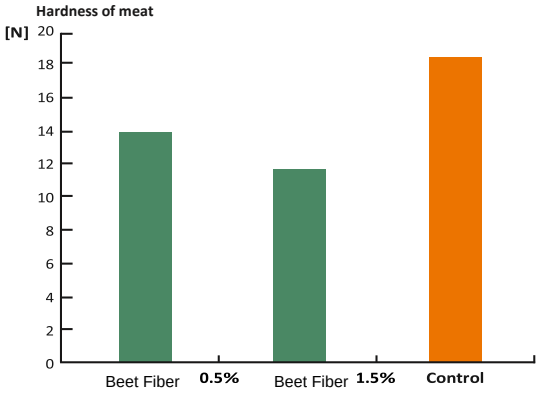
The barrier effect!

The cell structure inside the sugar beet fiber particle absorbs moisture from the meat surface and swells. It adsorbs oil on the outside of the particle. The bound water expands and evaporates during frying and forms a barrier which blocks most of the oil from crossing through to the coating.
At the same time, sugar beet fiber (e.g. PEKTOS Beet Fiber BF 5 E) assists in securing the natural moisture inside the product from evaporating through the coating, which contributes to an improved softness of the meat. The stability of the sugar beet fiber is not affected by temperature.

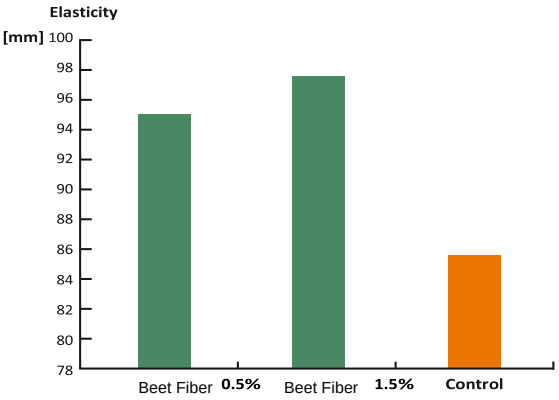
Results in deep-fried chicken



A small amount of 0.5% of sugar beet fiber (e.g. PEKTOS Beet Fiber BF 5 E) reduces the oil uptake from almost 60% to 30%. Increasing the amount of sugar beet fiber does not further reduce the oil uptake since this adds more particles that can adsorb oil, and the barrier effect will not be as efficient. There is an interaction with the following parameters.



Samples coated with Beet Fiber BF 5 are significantly softer than the control. Beet Fiber BF 5 interacts with the oil and closes pores in the mixture micro-structure. The water in the meat is unable to cross through the coating in larger quantities.



Preventing drying of the meat during the frying process preserves elasticity. Softer and more elastic meat satisfies sensory demands from the customer point of view.

The coating was made of 96% corn flour and 4% rice starch. The addition of sugar beet fiber (e.g. PEKTOS Beet Fiber BF 5 E) was made by reducing corn flour at the same ratio. The oil-content was measured using the Soxhlet method and the texture with a Stable Micro Systems TA.HD plus texture analizer. Frying was done at 180˚C for 5 minutes in palm oil.

Source: Sven Karlović, Damir Ježek, Blanko Tripalo, Mladen Brnčić and Tomislav Bosilijkov. Faculty of Food Technology and Biotechnology, University of Zagreb. Study:, "Effect of addition of dietary fiber in coating mixtures on textural properties and oil uptake in deep fried chicken.