

## **Superheated Steam as Pretreatment to Reduce Oil Uptake During Deep Frying of Chicken Nuggets**

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To reduce oil uptake during deep frying, chicken nuggets were pretreated with superheated steam (SHS) at 110 and 140°C for 3 and 5 min prior to deep frying. The SHS gauge pressure (5 kPa) and steam flow rate (11.23 kg/h) were kept constant in all pretreatments. After the steam treatment, nuggets were cooled and fried at 160°C for a period of 50-100 s, where the frying time was a function of the pretreatment conditions. Control samples were fried in fresh sunflower oil at 160°C for 3 min. Absorbed oil by nuggets was determined by the extraction with petroleum ether following a standard procedure. Also, colour crust and texture were measured. Crust of control nuggets resulted in 24.0% w.b. oil content, which was greater than the oil absorbed by crust in the pretreated with SHS nuggets ( $p < 0.05$ ). Higher oil uptake was measured when higher steam temperature was applied. It was probably related to a formation of a larger pore size in the SHS treated nuggets. The lowest oil content in crust (7.3%, w.b.) was obtained for nuggets pretreated with SHS at 110°C for 5 min. Crust texture was not affected by the SHS pretreatment. However, colour of pretreated samples had lighter appearance than control samples.