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Effect of Hydrocolloid Coatings and Bene Kernel Oil Acrylamide Formation during Potato Deep Frying

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Abstract : This study investigated the effect of carboxymethyl cellulose (CMC), tragacanth, and saalab hydrocolloids in two concentrations (0.3%, 0.7%) and different frying media, refined canola oil (RCO), RCO + 1% bene kernel oil (BKO), and RCO + 1 mg/l unsaponifiable matter (USM) of BKO on acrylamide formation in fried potato slices. The hydrocolloid coatings significantly reduced acrylamide formation in potatoes fried in all oils. Increasing the hydrocolloid concentration from 0.3% to 0.7% produced no effective inhibition of acrylamide. The 0.7 % CMC solution was identified as the most promising inhibitor of acrylamide formation in RCO oil, with a 62.9% reduction in acrylamide content. The addition of BKO or USM to RCO led to a noticeable reduction in the acrylamide level in fried potato slices. The findings suggest that a 0.7% CMC solution and RCO+USM are promising inhibitors of acrylamide formation in fried potato products.

Keywords : CMC, frying, potato, saalab, tracaganth
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