

Evaluating the impact of safflower oil concentration and fatty acid composition on consumer acceptance of soy pretzels

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A nutritious functional snack containing ingredients such as soy and linoleic acid which enhance satiety and lipid metabolism may be one strategy to alleviate obesity. However, designing a functional snack food containing substantial quantities of both of these ingredients is anticipated to compromise the pretzel quality; hence, have a detrimental impact on consumer acceptance. The impact of lipid incorporation, greater than 5%, into a pretzel snack on consumer acceptance largely has not been investigated. To this end, we hypothesized consumer acceptance would not be significantly different in soy pretzels containing high-linoleic compared to those with high-oleic safflower oil, which is favored in industry because of its shelf-stability. However, soy pretzels at 30% safflower oil, independent of fatty acid composition would be more acceptable than those at 10%. Two objectives of these investigations were to characterize the organoleptic attributes of high-linoleic and high-oleic safflower oil soy pretzels and to evaluate consumer acceptance at the various percentages of oil content (5, 10, 20, and 30%) in soy pretzels. Two sensory evaluations will be conducted. The first sensory study (n=18), was used to design the subsequent study involving 75 participants and both utilized a 9-point Hedonic scale (1=extremely dislike, 9=extremely like) for acceptability, descriptive analysis, and difference test. Preliminary results indicate soy pretzels with 20% high-linoleic safflower oil were well accepted (median, range: 7, 3-9) and similar to a conventional wheat pretzel with 20% high-linoleic safflower oil (8, 3-9), or traditional wheat pretzel with 20% shortening (8, 5-9). All pretzels were equally preferred. In the subsequent study, soy pretzels with high-linoleic or high-oleic safflower oil at 5, 10, 20, and 30% will be evaluated and we anticipate fatty acid composition will not impact consumer acceptance or preference and soy pretzel containing high-linoleic acid safflower oil would be feasible for future clinical trials investigating obesity.