

# Introducing a healthier, meat or meatless chicken sandwich Crackle-baked<sup>®</sup>

A new patented food preparation technology developed at the University of Arkansas, makes baked foods taste fried with ~60% less fat.

- **Healthier:** improves the nutritional value of traditional fried foods and is a welcome addition to meatless chicken sandwiches and nuggets
- **Tasty:** duplicates all of the unique attributes of fried food
- **Easy and cost effective:** process may be incorporated into existing coating lines without modification and uses all commercially available products



# 1

## *The skinny on great chicken*

The food industry has become increasingly focused on healthier menu items.



Frying imparts several critical and desirable product qualities, such as developing texture and color, and providing mouth-feel and flavor. Until now, no-one has been able to duplicate all of the unique characteristics of fried food with a baking process. This new technology uses the application of enzyme-modified starch as an oil delivery system in bake-only foods to provide characteristics of fried items. This improves the nutritional value of traditional fried foods by eliminating the frying process while preserving the desired characteristics of fried products.

# 2

## *How it works*

This patented invention, developed at the University of Arkansas, is an improved composition and process to bring liquid oil into a powdered or wet batter coating for food products. The coated products, when baked, have the taste, texture and appearance of fried products. This significantly reduces the fat content in the finished product (by approximately 60%), thus enabling baked products to successfully substitute for higher fat content fried foods. This process can be incorporated into existing coating lines without modification and uses all commercially available products. A peer reviewed published study in the Journal of Food Science (Volume 79, Issue 5, pages C802–C809, May 2014) has indicated that there are no significant differences between baked vs fried samples for all sensory attributes.

Various native starches are hydrolyzed by amyloglucosidase to a hydrolysis degree of 20% to 25% and plated with 50% (w/w, starch dry basis) with canola oil to create a starch-oil matrix. This matrix is then blended into a dry ingredient blend for batter and breader components. Nuggets are prepared with predust, hydrated batter and breader. The coated nuggets are then steam-baked until fully cooked and then frozen. Sensory attributes related to fried foods (for example, crispness and mouth-coating) do not significantly differ between bake-only nuggets using the enzyme-modified starches and the fried ones. This technology can deliver a sufficient quantity of oil to create sensory attributes similar to those of partially fried chicken nuggets.



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**Available for license or acquisition.  
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