



BlendPūr™ Flax in Bread, Tortillas and Muffins

BlendPūr™ Flax is a milled flaxseed ingredient that has powerful functional and nutritional benefits when used in baked goods, due to its impressive water-binding capabilities. This makes BlendPūr™ useful as a fat replacement in baked goods and as a gum replacement in applications such as tortillas and gluten-free baked goods. Over the years, we have conducted several studies to learn more about BlendPūr™'s unique functional capabilities in these applications.

BlendPūr™ Flax in Tortillas

In one study, Pizzey's BlendPūr™ Flax was evaluated for its ability to replace guar gum in tortillas. Hydrocolloids such as guar gum are widely used in food products including tortillas to modify textural characteristics, improve moisture retention and maintain overall good product quality during storage. However, guar gum is subject to significant price fluctuations and may not fit within a consumer's perception of a "clean label".

Background:

This study evaluated the efficacy of adding 0.7% BlendPūr™ to a tortilla formula as a complete replacement for hydrocolloids.

The three baking treatments below were evaluated:

Control	Standardized (no hydrocolloid incorporated)
Treatment 1	Hydrocolloid incorporated at 0.5%
Treatment 2	Hydrocolloid replaced with BlendPūr™
Treatment 3	Hydrocolloid replaced with BlendPūr™ incorporated at 0.7%

Dough handling properties and overall end-product quality were evaluated. Instrumental evaluation was conducted as well as tortilla moisture and texture over a 14-day period to assess the shelf-life quality of the tortillas. Tortillas were held in ambient storage conditions to assess the effect of BlendPūr™.

Conclusions:

- Tortilla doughs containing BlendPūr™ demonstrated very good dough handling properties, similar to the control containing hydrocolloids, producing soft and elastic, pliable dough.



- Overall appearance of tortillas with BlendPūr™ was very appealing and scored equivalent to the treatment 1 (tortillas with guar gum).
- Tortillas produced with BlendPūr™ showed comparable or better extensibility than the tortillas produced with guar gum over the period evaluated.
- Only slight differences were detected in moisture contents amongst the tortillas with or without BlendPūr™. Moisture retention did not appear to be increased at these levels of addition.

BlendPūr™ Flaxseed in Bread

Development work with BlendPūr™ flaxseed has shown that in white pan bread, up to 50% of the formula shortening or oil can be replaced with flaxseed for a lower cost, reduced fat content and a very acceptable bread product.

Background:

The following treatments were evaluated:

Control	3% oil level
Low Fat	1.5% oil level
Low Fat with BlendPūr™	1.5% oil level

All breads were made with both a no time dough (15 min hold) and a fermented dough (2hr hold) prior to forming and proofing to determine potential BlendPūr™ effects with dough hold time.

To minimize potential processing issues with soft vs. firm doughs, all doughs were adjusted to a similar BU using farinograph testing. The low fat BlendPūr™ dough required a 1% increase in hydration to match the control dough BU.

Doughs were baked and tested for peak firmness at 1, 3 and 5 days ambient storage.

Conclusions:

- 1.5% oil loaves with BlendPūr™ were equally as soft as control 3% oil loaves while 1.5% oil loaves without BlendPūr™ were more firm vs. 3% oil control loaves.
- Hydrated BlendPūr™ is an effective replacement for oil in the white pan bread system.



- An equivalent softening effect of BlendPūr™ was present in both no time bread (15 minute dough ferment) and in bread with a 2 hour fermented dough.
- The softening effect of BlendPūr™ was present over a five-day ambient hold time.

BlendPūr™ Flaxseed in Muffins

Initial work in a white pan bread system showed that up to 50% of the formula shortening could be replaced by a combination of BlendPūr™ and water. The goal of this work is to determine if that replacement would work in a muffin system.

Background:

Muffins (1 dozen using an AIB formula) were made with the following variables:

Control	
Low Fat	15% oil reduction
Low Fat with BlendPūr™	15% oil reduction + BlendPūr™ + 8% water (fwb)

The Pizzey BlendPūr™ batter was adjusted with water so that a Bostwick viscosity measurement of the batter matched the control batter viscosity.

Muffins were baked and tested for volume, firmness and springiness at 3 hours, 1 day and 3 days. A sensory evaluation of the muffins was done on Day 1.

Conclusions:

- 8% (on a flour weight basis) additional water was required to hydrate the Pizzey BlendPūr™ so that the Bostwick viscosity matched Control batter viscosity.
- The reduced oil muffins with BlendPūr™ were equally soft or softer than Control over a 3 day shelf life while the reduced oil muffins alone were significantly firmer.
- The BlendPūr™ also appeared to have a slightly positive effect on springiness over time.
- Reduced oil muffins had a higher volume than Control and this volume increase was maintained when the BlendPūr™ was added to the reduced oil formula.
- The reduced oil muffins with BlendPūr™ were very similar to control in most sensory attributes on Day 1. The main differences were a larger/more open grain and a slight grayish tint to the crumb of the BlendPūr™ muffins.



- From this data it appears that the hydrated Pizzey BlendPūr™ is an effective replacement for oil in a muffin system.

Contact us for sample formulas and to learn more.