

Protein Fortified Waffles: Solving Cracking and Production Challenges with BakePLUS™



Situation

A customer approached our team after dealing with problems fortifying their thin waffle with protein. They tried a variety of proteins - Pea Protein, WPC 80 and WPI. The customer experienced breaking and cracking challenges in waffles and had machinability issues due to the batter viscosity and tackiness.

Goals

1. Eliminate cracking in waffles
2. Achieve desired nutritional parameters
3. Manufacture on current equipment

BakePLUS™, a unique blend of dairy proteins, is the solution to fortify snacks and baked goods with protein. It prevents over-aeration and product rise/lift which occurs when protein is added to baked goods.

- Highly soluble
- Heat stable
- Resists gelling during processing

Solution

AMCO Proteins evaluated the gold standard waffle batter to understand its behavior while mixing and baking. The evaluations also involved several iterations with whey protein concentrate, whey protein isolate and pea protein. Whey protein concentrate caused the batter to be too runny and left the waffles with cracks. Whey protein isolate made the waffles too brittle and collapsed the structural integrity once baked, on the other hand, the pea protein created grittiness and an astringency in the waffles.

Ultimately, we proposed that AMCO Proteins' BakePLUS dairy protein blend would be the ideal solution to solve their production and nutritional challenges.

Results

By fortifying these waffles with BakePLUS, AMCO Proteins solved customer's challenges:

- ✓ **Eliminated the cracking.** Compared to the control sample with flour, BakePLUS provided the similar structural properties of flour (while replacing a portion of flour) and eliminated the cracking.
- ✓ **Met nutritional parameters.** Waffles were enriched with protein.
- ✓ **Eliminated production adjustments.** Batter consistency was identical to gold standard batter which eliminated the machinery adjustments.