

What the Cake! Meeting Clean Label Needs by Using Proteins Instead of Traditional Emulsifiers

By Michael Seitter

Aerating emulsifiers for cakes have been used since the 1980s as active ingredients in plenty of bakery mixes. They enable the incorporation of air into cake batters with an all-in-method, leading to soft, spongy and indulgent cakes. Moreover, aerating emulsifiers lead to a high manufacturing safety, since they minimize raw material and process influences. The invention of aerating emulsifiers was the start of a success story and is now consequently driven to fit today's market demands: Megatrends like health, sustainability or individualism are floating social media, newspaper articles or

television and raise awareness for products which provide not only indulgence, but also convenience. Therefore, market needs like palm alternative or "free from", have already been successfully addressed with several innovative products (e.g. Spongolit® 50 RS or the Lamequick® CN range).

For consequently feeding this innovation pipeline, BASF launches not only a "leaner label" but also a complete "clean label" cake aerating system now: Spongolit® Pure 10 provides the same cake aeration and

stabilization as established aerating systems using emulsifiers. After a long period of research, a breakthrough method of manufacturing protein-based products into a stable and reliable form - imitating the well-known attributes of activated cake stabilizers - has been found. But how can proteins act the same way as traditional synthesized emulsifiers? Here fore, we need to investigate the mechanism of cake batter aeration, which can be described as dispersion of gas into a matrix of solid and dissolved particles. The air is trapped in a layer of ambiphil molecules, such as emulsifiers. Proteins also show such ambiphilic character, depending on the composition and sequence of their amino acids. The research process started right here by carving out this functionality to enhance the whip ability as well as cake batter stabilizing effect.

As Figure 1 shows, the aeration of Spongolit® Pure 10 starts immediately after turning on the planetary mixer. After the incorporation of air in the first few minutes of whipping, the air bubbles are homogenously distributed within the entire batter. This ensures a fine, uniform and stable crumb structure, which is desired by cake consumers all over the world.

Digging deeper into the aeration characteristics of Spongolit® Pure 10, it becomes evident that the product behaves identically compared to common aerating systems in respect of decreasing batter densities and increasing cake volumes (Figure 2). Moreover, an application dosage advantage can be observed, when comparing Spongolit® Pure 10 to standard grade aerating systems.

Spongolit® Pure 10 is the first clean label high performing cake aerating system on the market enabling forward- thinking fine bakery developments.

Learn more at www.human-nutrition.basf.com or contact human-nutrition-europe@basf.com for further information.

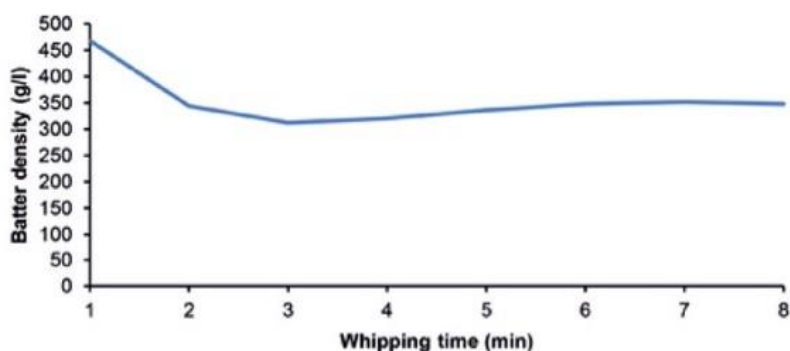


Figure 1: Influence of Spongolit® Pure 10 aerating system on batter density.

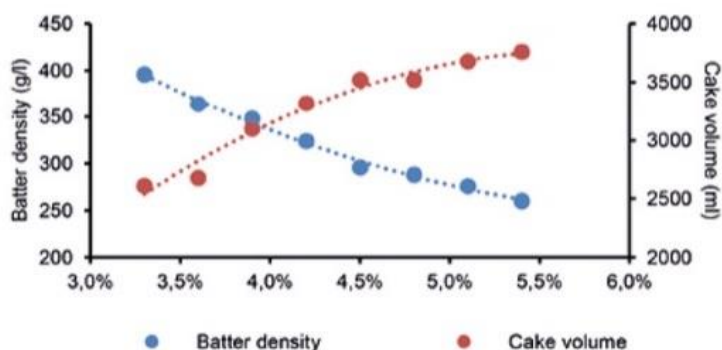


Figure 2: Influence of dosage Spongolit® Pure 10 on batter density and cake volume.