

Emulsifiers in Bakery – Small Amount, Big Effects



The composition of bakery products has progressed from hydrogenated and hard fats, to using natural fats and oil blends. The bakery trend has moved towards healthier products with less fat, sugar and sodium, and more fibre without the use of bromate⁵.

Emulsifiers play an important role as a functional ingredient in baked goods. They enable a homogenous blending of oil and water in bakery products to achieve consistency in every batch. Emulsifiers help to maintain the quality, freshness and integrity of baked goods by improving the interaction between oil and water¹.

Emulsifiers in the Market

Sodium Stearoyl Lactylate (SSL)

SSL can be incorporated into bread to increase its softness as well as in cake batter to achieve a higher stability. It is one of the most effective emulsifiers and the most widely used dough conditioner applied in bread making. SSL strengthens the dough during processing and to keep the crumb soft while in storage^{1,3}.

Diacetyl tartaric acid esters of fatty acids (DATEM)

DATEM is suitable for strengthening the gluten-starch network. This improves dough stability during proofing in order to produce baked goods with increased volume and better internal crumb texture¹. It is a surfactant that can interact with flour components including fat, protein and starch⁶. Its safety as a food additive has been approved by the FDA, EFSA and JECFA^{2,4,7}.

Conclusion

The type of emulsifier and usage level will vary depending on the bakery product and formulation. The right choice of bakery emulsifiers can help to achieve unrivalled batter-stability, improved bread volume and texture, prolonged shelf life and cost reductions in bread premixes. They offer optimized quality, moistness, mouthfeel and production performance for bakery products.

At DPO, we are honoured to be in partnership with **Palsgaard** to bring you a range of ingredient choices that will elevate the quality of your bakery products.

References

¹Eduardo, M., Svanberg, U., & Ahrné, L. (2014). Effect of Hydrocolloids and Emulsifiers on Baking Quality of Composite Cassava-Maize-Wheat Breads. *International Journal Of Food Science*, 2014, 1-9. <https://doi.org/10.1155/2014/479630>

²EFSA. (2020). Panel on Food Additives and Flavourings (FAF). Scientific Opinion on the re-evaluation of acetic acid, lactic acid, citric acid, tartaric acid, mono- and diacetyltartaric acid, mixed acetic and tartaric acid esters of mono- and diglycerides of fatty acids (E 472a-f) as food additives. *EFSA Journal*, 18(3). <https://doi.org/10.2903/j.efsa.2020.6032>

³Gomes-Ruffi, C. R., Cunha, R. H. da, Almeida, E. L., Chang, Y. K., & Steel, C. J. (2012). Effect of the emulsifier sodium stearoyl lactylate and of the enzyme maltogenic amylase on the quality of pan bread during storage. *LWT - Food Science and Technology*, 49(1), 96–101. <https://doi.org/10.1016/j.lwt.2012.04.014>

⁴Joint FAO/WHO Expert Committee on Food Additives (JECFA). (2003). Safety evaluation of certain food additives and contaminants. WHO Technical Report No. 922. Geneva: World Health Organization, pp. 61-66.

⁵Orthoefer, F., & Kim, D. (2019). Applications of Emulsifiers in Baked Foods. In: Hasenhuettl G., Hartel R. (eds) *Food Emulsifiers and Their Applications*. Springer, Cham. https://doi.org/10.1007/978-3-030-29187-7_10

⁶Ponzio, N., Ferrero, C., & Puppo, M. C. (2011). Wheat Varietal Flours: Influence of Pectin and DATEM on Dough and Bread Quality. *International Journal of Food Properties*, <https://doi.org/10.1080/10942912.2010.501467>

⁷U.S. Food and Drug Administration. (2019). *Direct Food Substances Affirmed As Generally Recognized As Safe*. Washington, DC.