

All about antioxidants

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The Montmorency tart cherry's anthocyanins can bring a healthy halo to any baked good it's presented in..

Fat and oils are a necessary part of many baked foods. When present, these ingredients confer upon the finished product the eating characteristics consumers expect from their layer cakes, pie crusts and pastries. They provide taste, texture and plasticity to the dough plus lubricity and moist mouthfeel to the eating experience.

“While fats impart taste and texture to baked or extruded products, they are susceptible to oxidation and to rancidity,” said Jennifer Igou, North America general manager, Camlin Fine Sciences.

To preserve freshness, bakers can employ a variety of strategies and tactics, including use of ingredients such as antioxidants.

“Antioxidants are designed to inhibit or delay lipid oxidation and rancidity of foods containing oils and fats,” said John Wyatt, regional product manager, food protection, DuPont Nutrition & Health. Lipids, a.k.a. fats, oxidize through an auto-oxidation chain reaction. Unsaturated fatty acid molecules break apart to form free radicals, which then convert other fatty acid molecules into more of them. This reaction cascades and swells out of control until consumers are left with a spoiled baked good bearing undesirable aromas, colors and flavors. Antioxidants have the power to interrupt this chain reaction and slow it for a time.

“The antioxidant sacrifices itself, preferentially undergoes oxidation and protects other ingredients from undergoing oxidation in the food item,” explained Chandra Ankolekar, PhD, technical services

manager, Kemin. “Instead of the free radical attacking the fat molecule, it attacks the antioxidant.”

Antioxidants, synthetic and natural, help stabilize fats. They extend shelf life and preserve the baked good’s aroma and flavor. Several antioxidants are available to bakers, but choosing the right one for a given formulation depends on several factors. Bakers should be conscious of their label requirements, processing environment, flavor expectations and solubility needs to find the proper antioxidant for their formulation.

Keep reading to learn how the clean label movement is affecting antioxidant use.

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