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Clean & Clear—Industry Norm or Niche?

New data from Innova Market Insights shows that more than 20 percent of U.S. products tracked in 2014 featured clean label positioning. In response to consumer demand, companies increasingly are including natural sweeteners and natural colors, simplifying packaging and striving for simple label claims. These combined efforts and their scope have elevated clean label from niche to industry norm.

The clean label movement underscores the importance of ingredient selection. Food manufacturers have a vested interest in creating products that are minimally processed or created with ingredients as familiar to consumers as those they might find in their own kitchen cupboards or refrigerator.

The bonus is finding an ingredient that not only looks good on the label statement, but also supplies functional benefits. REAL eggs are multifunctional, with more than twenty functional properties in all. Further, they’ve been tried and tested over decades in numerous applications scenarios using different types of processing methods. REAL eggs are ingredients formulators know and trust to create successful products, with desirable texture, appearance, shelf life and organoleptic properties.

Although avian influenza caused supply to temporarily tighten up, keeping eggs part of your formulation strategy makes sense on many levels. There is no one-to-one substitution that can replace the multiple functional properties supplied by REAL egg ingredients. This paper details the characteristics of a gold standard product, and discusses the importance of taste,
AEB Update: AIB International Weighs in on Egg Ingredients in Baking

(Continued from cover)

The institute serves as a resource to teach, troubleshoot and lend technical advice so bread and baked goods continue to achieve the highest quality taste, texture and appearance while turning a profit for the operator.

Recently, we interviewed Luis Belozerco, Baking & Food Technical Services at AIB International in Manhattan, KS, to ask about the multiple roles played by egg ingredients in baking applications. Within many baking applications, more than one functional property of eggs is at work. Belozerco dives into best practices to help maintain product appearance, taste, texture and quality.

Within the videos, Belozerco discusses the three critical phases in production: the mixing process, oven temperatures and bake time. He explains the importance of these three phases and adjustments bakers should consider prior to reformulating.

Eggs are used in varying amounts and supply different functional properties depending on the baking application. For example, the foaming capability and aeration eggs provide is responsible for the appearance, volume and/or texture in products like macarons, meringues and foam-type cakes such as angel food.

Other products rely on eggs for a stable emulsion, particularly in baked goods with a higher fat content. The more egg, the more stable the emulsion.

The final word on the topic? “There is not a single substitute that can replace all of the functions eggs perform in all of the different types of baking products,” said Belozerco.

Prior to joining the staff at AIB International, Luis Belozerco worked for more than 25 years as a baking professional on grain-based products and technical solutions for a number of multinational corporations. To view the video series about egg ingredients within baking, log onto AEB.org/TechTalkBaking

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texture and appearance on consumer appeal and acceptance. REAL eggs can help achieve this gold standard.

If the moniker “incredible” applies to any aspect of the egg, it applies to its functional benefits. The list includes more than twenty functional properties egg ingredients can supply, including aeration, binding, coagulation, emulsification, foaming and whipping, to name a few. Although it might not count as “functional,” don’t forget taste.

Taste Ranks Number One

Among the triumvirate of taste, texture and appearance, taste still trumps any other measurement for predicting product success. The International Food Information Council (IFIC) Foundation conducts its Food & Health survey every year and without fail, the top factor influencing consumers’ food and beverage purchases is always taste. An overwhelming 83 percent of consumers selected this as a primary purchase factor for food and beverage decisions in its latest survey, published earlier this year.

Some egg replacements do not emulate the sensory profile of REAL eggs and/or may contribute a strong flavor to the finished product. REAL egg ingredients allow formulators to create products without worrying about off-flavors.

In addition to other subtopics, the paper presents research comparing egg ingredient performance to other types of ingredients within different application scenarios, including mayonnaise, cookies and cakes. Summing it up, Kevin Keener, Ph.D., P.E., professor of food science and food process engineering at Purdue University, West Lafayette, Ind., said, “Egg protein functionality is a collective effect from a diverse set of the proteins and lipoproteins that exhibit functionality across a wide range of temperatures, storage conditions, baking conditions and food compositions. To date, all of the known animal and plant protein combinations that position themselves as egg replacers fall short in a number of roles.”

REAL egg ingredients fit the profile for clean and simple, clear and transparent and functionality all rolled into one ingredient. To read the complete paper, click on AEB.org/RealEggs
Egg Ingredient Spotlight:

Egg Yolk—The Amazing Emulsifier

The emulsifying power of egg yolk is most commonly associated with dressings and sauces or condiments such as mayonnaise. However it also plays a role in baking and other sweet applications. Product samples distributed by staff at the IFT Annual Meeting & Expo in July included egg yolk in more than one instance. And, as is common when using an egg ingredient in formulation, the egg yolk often performed more than one function within the given application.

For example the most popular sample at the show by far was a Dulce de Leche pudding, with show attendees returning for seconds and even thirds. Within the pudding composition, egg yolks provided creaminess, thickening and richness to the pudding, in addition to emulsification. A product combining a fat and water phase requires an emulsifier to prevent them from separating. The pudding represents a cooked custard-type application. Without egg yolks the pudding could prove pasty or starchy and not possess the rich tasting flavor.

In another instance, savory cookies, including Asiago & Rosemary or Bacon & Caramelized Onion, present a tender, yet crisp texture due to the addition of cooked egg yolks. The cooked yolks don’t contribute as much moisture as liquid eggs would and create a unique, sandy texture and rich flavor. An egg wash on top of the cookies gives a slight, golden brown sheen and helps to adhere the flaky sea salt to offer additional textural contrast.

Finally the sweet and savory curds served alongside the savory cookies also features the emulsifying power of egg yolks however in this instance, utilized whole eggs as a featured ingredients. The two flavors for the sweet and savory curds were Raspberry Balsamic and Heirloom Tomato, respectively.

Whole eggs are a traditional ingredient in fruit curds, and primarily thickening and emulsifying properties, but also contribute to a rich, creamy, smooth texture. Without eggs, the curd would be cloyingly sweet and pasty.

For information about obtaining any of the sample formulations developed for IFT or for other ideas, email the American Egg Board at aeb@aeb.org.
Q&A Solutions: Emulsification

Q. Does emulsification have a role in baking applications?

A. An emulsion is the suspension of small globules of one liquid within a second, with which the first will not mix, otherwise known as immiscible liquids. When combining two immiscible ingredients, or substances that naturally want to separate, an emulsifying agent is necessary to create stability. A logical solution for many baking applications requiring emulsification is the egg yolk.

An egg yolk is comprised of approximately 50 percent water, 17 percent protein and 33 percent lipids, including triglycerides or neutral fats and phospholipids such as lecithin. (The egg yolk also contains xanthophyll, the main yellow pigment, which lends a pleasing yellow color to certain cakes and other baked goods.)

The phospholipids, lipoproteins and proteins found in egg yolks are surface-active agents that enable the formation of emulsions from immiscible liquids such as oil and water. Shear also is an important factor. Proper mix order and speed enables egg yolks to more readily disperse the liquid and promote an even suspension of liquid in fat. This creates a stable emulsion:

• The emulsion should be viscous to hold suspended ingredients in place
• And droplets dispersed (oil or water) should be small enough to remain in suspension and should be evenly distributed throughout the matrix

Baked goods with a higher fat content such as cheesecake or cream cake rely on emulsifying agents for proper mixing, form and structure. These products might be made with liquid frozen sugared egg yolk, while cinnamon rolls or muffins would be make with liquid frozen whole eggs.

Even within bread, as little as 0.5 percent emulsifier added to the dough is enough to create a product with a softer crumb structure, enhanced volume and longer shelf life. The egg yolk helps create a stable emulsion of liquid and fat in the batter. When using eggs for emulsification, the cake will have a springy, even crumb, great flavor and light texture. Batter that is not properly emulsified will result in a cake that can be uneven and flat, flavorless, with a heavy texture. It is possible for the cake to “fall” and present a dense texture without the light airiness consumers expect.
Avian Influenza Update

Recovery is underway within the U.S. egg farming community following the repercussions of avian influenza (AI) from this past spring. Some farms have started repopulating their flocks, adhering to stringent cleaning and disinfection regulations defined by USDA-APHIS. In addition, farms across the nation have taken steps to enhance biosecurity measures. Although it might take 18 months to fully repopulate farms and reach previous production levels, egg supply is gradually increasing, according to USDA AMS reported figures.

Further processed egg products in all their forms are pasteurized to ensure their safety. Pasteurization inactivates the AI virus. For more information, visit eggindustrycenter.org/avian-influenza--eggs

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Egg Product Innovations

**Schnucks Kale and Spinach Bites**
Schnucks Markets created a super appetizer with two super vegetables, kale and spinach. Both are loaded with vitamins and minerals including folate, vitamins A, K and more. Bits of kale and spinach blend with caramelized onion, Parmesan cheese and spices. Nature’s most “perfect” food or ingredient, the egg, helps bind the ingredients together. The product can be warmed in minutes and comes with ten pieces per 8-oz. package.

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**Daily Chef Cheesecake Miniatures**
Sam’s West serves up Daily Chef Cheesecake Miniatures that fit perfectly into the single-serve, indulgent dessert craze. Each 19.2-ounce package contains a variety of flavors of these bite-sized cheesecake pieces, each nestled in an individual paper cup, allowing for a small indulgence at any time, anywhere. Flavors include New York style, turtle, plain and raspberry swirl. Cheesecake of course includes eggs for emulsification and smooth creaminess.

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**Garden Lites Butternut Squash Soufflé**
Classic Cooking’s Garden Lites Butternut Squash Soufflé is available in a 7-ounce recyclable pack in a BPA-free bowl. Farms Meal Starters concept fits into the consumer desire for from-scratch cooking feel blended with convenience.
Egg Product Buyers’ Guide

Egg Product Buyers’ Guide is available in print or online on our website under the Food Manufacturers’ tab. Egg products are searchable by company, by type of egg product or by distribution region. The downloadable version is available as a pdf. Please visit AEB.org/BuyersGuide

*Information contained in this Buyers’ Guide was provided by U.S. egg product suppliers and may not be a complete listing.

Egg Cloud

While there are many forms of protein, none match the versatility of eggs. When used as an ingredient in food manufacturing, REAL eggs contribute 20-plus functional properties and benefits to formulators, with many of these benefits attributable to the egg’s protein content. This word cloud advertisement visually represents some of the most important qualities of REAL egg ingredients, primarily related to their protein content. For more information about the high-quality, functional protein eggs can supply to foods and beverages, download our new white paper, “REAL Eggs: Not All Proteins are Created Equal,” by visiting AEB.org/Protein