Dough Conditioners

Today's baking industry requires solutions to satisfy consumers' demands for high-quality, consistent, and shelf-stable bakery products. Thus a challenge for bakers is presented. Bakers need the use of certain ingredients to be able to satisfy this consumer's need, these ingredients are substances known as dough conditioners or dough improvers. Dough conditioners allow bakers to produce consistently good products without sacrificing production time or ingredients.

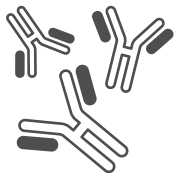
What are dough conditioners?

Dough conditioners are ingredients used in baking to enhance the overall quality of the dough and the final baked product. These ingredients improve dough handling, increase volume, extend shelf life, and enhance texture. While their names might sound complex, dough conditioners simplify the baking process and elevate the quality of the end product.

How do they work?

At its core, the science behind dough conditioners revolves around improving the complex interactions between protein, starches and water while also assisting in leavening.

1 Protein Interaction



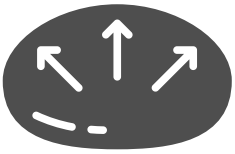
Gluten, a protein in wheat flour, is important in providing structure to the dough. Dough conditioners can enhance gluten development, resulting in a more elastic and resilient dough that is easier to handle by machinery. This improved gluten structure better traps carbon dioxide produced during fermentation, contributing to a better rise in yeast-raised products, and thus improving the overall quality of the final product by increasing loaf volume and improving crumb structure.

Among the specialized solutions available to bakers, Select Custom Solutions' PZ™ Dough Conditioners and REDDI-SPONGE® Dough Developers stand out. These products have been trusted for decades to optimize dough properties, reduce mixing and fermentation times, and enhance the overall quality of bakery items. Learn more!

2 Starch Modification:

Dough conditioners can influence the properties of starch, the carbohydrate component of flour. This modification aids in better water absorption, resulting in a softer and more consistent texture in the final product.

3 Leavening Assistance



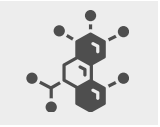
In chemical-leavened products, like cakes, dough conditioners facilitate the release of carbon dioxide gas during baking. This gas expands within the dough, creating a light and airy texture.

Common Dough Conditioners in the Baking Industry

A wide variety of dough conditioners can be used in baked goods. Commonly used dough conditioners and their roles in various baking processes are presented in the following section.

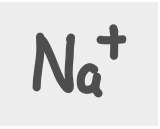
Ascorbic Acid

Also known as Vitamin C, ascorbic acid strengthens gluten networks, enhancing the dough's ability to trap gas produced by yeast. This results in improved volume and a finer crumb structure.



Enzymes

Protease enzymes break down proteins, contributing to improved dough extensibility. Amylase enzymes, on the other hand, assist in starch breakdown, enhancing fermentation and promoting a better rise.



Sodium Stearoyl Lactylate (SSL)

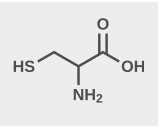
Is an emulsifier used in the baking industry as a dough strengthener and crumb softener, especially in bread and buns. It interacts with protein due to its ionic non-polar nature by promoting their aggregation. It can retard starch stalling by interaction with its nonpolar side. Usually added to improve the shelf life of bread and buns, improve the softness of tortillas, and boost oven spring by improving gas retention capacity.

Diacetyl Tartaric Acid Ester of Mono-and Diglycerides (DATEM)

Is an emulsifier commonly used as a dough strengthener, improving the proofing and overall baking. It aids in increasing the volume of baked goods and providing a uniform and fine crumb.

Mono & DIglycerides

Are surfactants used as emulsifiers in bakery products and they aid in a variety of functions. Among the most important ones are improvement of loaf volume, improved shelf-life by inhibiting or slowing down starch retrogradation, optimizing aeration in cake batters, and improving the oil-in-water interphase. In bread, they can improve gas retention capacity and strengthen the gluten network. It also helps in slice ability, reducing crumb production in the slicing area.



L-cysteine

An animal- or fermentation-derived amino acid used as a reducing agent to soften gluten and relax dough, reducing mixing times and improving dough consistency.

Inactivated yeast

Is a reducing agent that functions similarly to L-cysteine. When used in formulas, it helps reduce mix times and improves the flow of the dough.

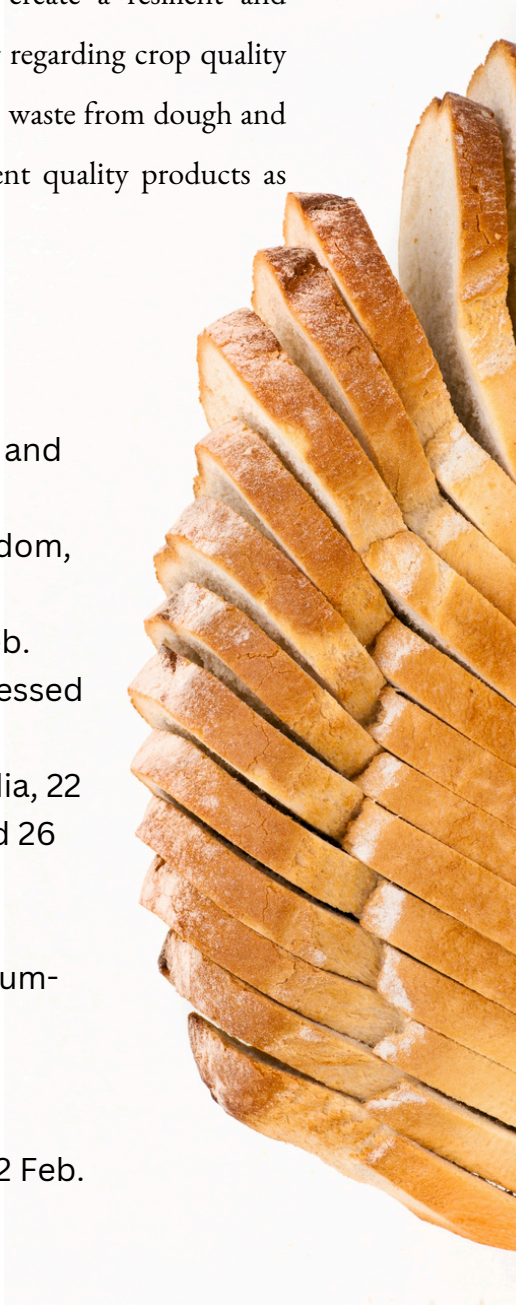
Select Custom Solutions Dough Conditioner Offerings

PZ™ Dough Conditioners: This line of dough conditioners has been used for over 50 years by manufacturers of pizza, tortillas, and other bakery items in need of dough relaxing and softening. PZ™ eliminates the need for long fermentation times through the gluten relaxing action of L-cysteine. It reduces mix time, improves machinability, and contributes milk solids for enhanced flavor and color.

REDDI-SPONGE® Dough Developers: Trusted for over 60 years in the baking industry, this line of dough developers enhances dough strength and structure while maintaining a soft texture. Through its unique blend of fast-acting reducing agents and slow-acting oxidizing agents, Reddi-Sponge reduces mix times and lengthy fermentation while also ensuring dough maintains its shape during and after baking, resulting in baked goods with superior volume and texture. The Reddi-Sponge line offers several options to fit your labeling needs.

Summary

In summary, dough conditioners are ingredients used in baked goods to create a resilient and manageable dough on a high-speed line. It also helps provide a margin of error regarding crop quality changes in the flour. Without dough conditioners, bakers may experience much waste from dough and product damage. Dough conditioners provide the ability to produce consistent quality products as expected by your customers.



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