

Mixing has “major influence”™ on gluten-free bread quality “ study 08 February 2013

Bakeryandsnacks.com (7/2/2013) reported on a study published in the Journal of Food Quality by Gomez *et al.* that mixing has a much bigger impact on the quality of gluten-free bread than previously understood. The research highlights the importance of levels of hydration in the dough. Optimization of the type of mixing arm, the mixing speed and total mixing time could produce higher quality gluten-free bread.

The researchers said their study marked the first time a rheofermentometer, an instrument that analyses bread dough behaviour had been used for gluten-free bread.

The mixing process of the gluten-free elaborations can be optimized, obtaining breads with higher volume and lower hardness and improving the final quality of the bread, one of the major problems of gluten free breads.

In wheat breads, gluten is responsible for forming doughs that can retain gas during fermentation. When gluten is removed, quality is affected and hydrocolloids are used as gluten substitutes and enzymes added to the formulation in attempts to retain this quality. However in this research into the influence of other process-related factors, particularly mixing and dough formation were studied.

The researchers studied gluten free breads with 80 and 110% hydration using rheofermentographic analysis to determine the optimum times and speed of mixing and whether a dough hook, wire whip or flat beater mixing arm produced the best results. In less-hydrated breads, it made no difference whether a flat beater or dough hook were used. However, longer mixing times helped the bread achieve a higher volume.

In more hydrated breads, the type of mixing arm and speed was found to have a big impact on the volume and texture of the dough. Doughs mixed with the wire whip produced higher volumes and softer breads, but only by using a lower mixing speed and longer mixing time.

The research concluded that dough mixing parameters will always need to be optimized for each formulation, taking into account the speed and duration of mixing and the type of stand mixer.

[Source: Gómez et al. 2013. Influence of Mixing on Quality of Gluten-Free Bread'. Journal of Food Quality Vol. 36 Issue 1.](#)

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