CALIFORNIA SCIENCE & ENGINEERING FAIR
2019 PROJECT SUMMARY

Name(s)	Project Number
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Project Title

How Do Different Types of Flour in Sourdough Starter Affect the Resulting Bread?

Abstract

Objectives

The objective of this study is to determine how different types of flour in sourdough starter affect the resulting bread.

Methods

5 different types of flour (rye, whole wheat, unbleached all-purpose, bleached all-purpose, and a blend of both rye and unbleached all-purpose); Make starters by mixing flour and water, each type flour prepared in triplicate (Total 15 starters); feed daily for a week until mature; Make dough with each different type of starter and bake into bread. Observe the difference in activity, odor, and viscosity based on appearance during the feeding; Observe the difference in hole density between the loaves of bread, Evaluate the final taste, aroma, and texture of the resulting bread.

Results

During the feeding process, no noticeable changes were observed in colors for all types of flour. Sour odor were developed at similar rate with no significant differences in the level of sourness. The starter texture of both all-purpose flour (unbleached and bleached) were thinner with no large trapped bubbles compared to the other three.

For the final bread, each type of bread loaf had similar taste and aroma, however, the texture differed in that both all-purpose flours (unbleached and bleached) had a dense texture with several tunnel-like large air pockets, while the other three types were fluffier with no large collapsed large air pockets.

Conclusions

With repeating trials of the triplicate experimental design, this study shows that the differences in the starting flour for sourdough starter have an effect on the final result.

Summary Statement

By using five different types of flour to make sourdough starters for baking bread, we found the differences in flour used have an effect on the final result.

Help Received

None. We designed and performed the experiments ourselves.