



EFFECTS OF ANCIENT WHEAT SOURDOUGH ADDITION ON BREAD RHEOLOGICAL AND TEXTURAL PROPERTIES

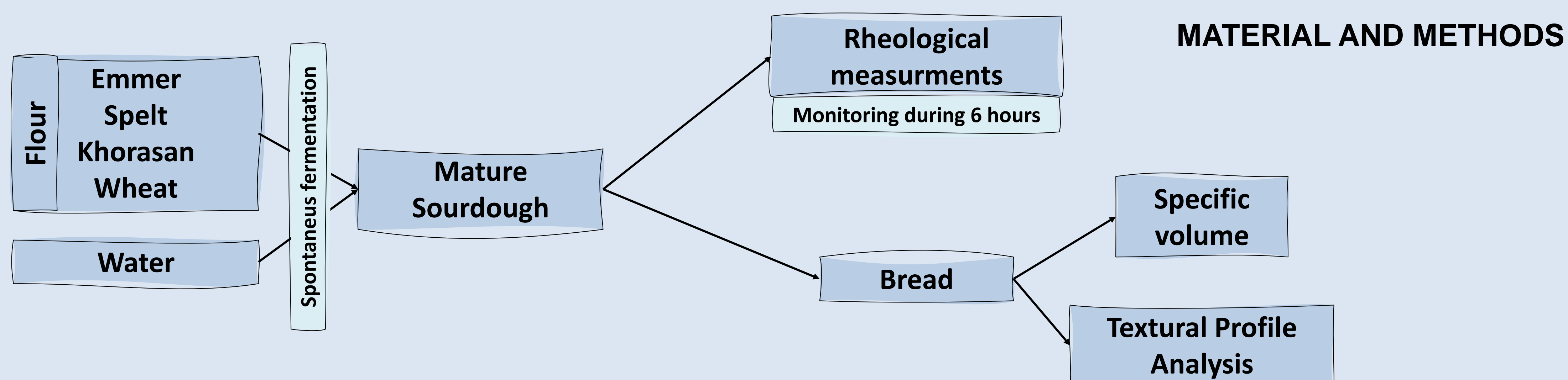
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INTRODUCTION

Ancient varieties of wheat were neglected for some time, due to the advantages of modern varieties such as high yield with improved technological characteristics. The term modern wheat refers to wheat varieties which has been subjected to numerous changes in order to achieve previously mentioned characteristics. However, consumer's awareness of the importance of nutritional quality ingredients in food, as well as potential health benefits, has contributed to the revival of the use of ancient varieties. Furthermore, implementation of processes such as sourdough fermentation can improve dough and products characteristics. Sourdough fermentation is one of the most common processes used by artisan bakeries. The use of sourdough contributes to the rheological properties, influences the texture (hardness, adhesiveness, cohesiveness, chewiness, gumminess), shape, specific volume, colour, and moisture retention of products. Furthermore, there are some studies focusing on the improvement of microbiological, nutritional and functional characteristics of sourdough bread obtained with the flour of some ancient wheat species. Since the textural properties of food are closely related to its rheological properties, achieving good properties and improving dough rheological properties are important for obtaining good quality product which is reflected especially at sensory characteristics of products.



MATERIAL AND METHODS



DISCUSSION

The samples exhibited different trends in rheological parameters. Dough extensibility has increased during fermentation in samples with ancient wheat varieties, except in khorasan where during first few hours dough extensibility has been increasing and after 4 hours the extensibility has been decreased. However, the dough extensibility of modern wheat has decreased during first hours and after 4 hours has significantly increased. The specific volume of wheat sourdough sample has been significantly lower compared to other three ancient wheat samples. According to TPA tests, ancient wheat varieties had lower hardness and chewiness values, compared to modern wheat-based sourdough.

CONCLUSION

Due to different characteristics of flour and presence of different microbiota, rheological behaviour of samples showed different trends. However, after examination of textural and volume characteristics of bread samples it can be concluded that ancient wheats had higher potential for creating products with better quality. Further research should be conducted, in terms of nutritional and functional properties, in order to improve and additionally confirm above-mentioned statement.

Key words: sourdough, rheology, ancient wheat.

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