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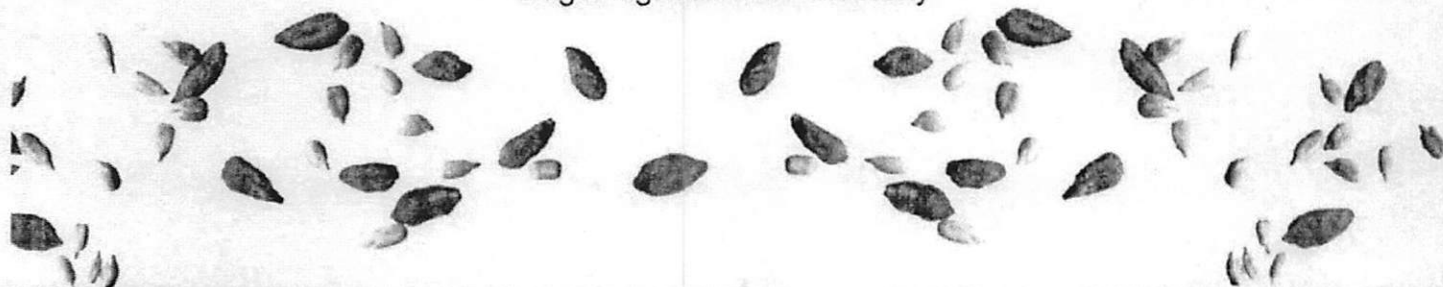
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Application of α -Amylase for Improving Purple Sweet Potato Composite Bread Properties

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ABSTRACT

The quality of bread is determined by functionality of carbohydrate and protein component of the bread, especially gluten. Purple sweet potato can increase food functionality due to its dietary fiber and anthocyanine content, however cannot directly used for bread making because of its gluten free property. Therefore in the present study we aimed to make composite bread from purple sweet potato pasta and wheat flour. To improve the physicochemical properties of the bread we used α -amylase enzymes from *Aspergillus oryzae* (Taka-amylase) and *Saccharomycopsis fibuligera* (Sfamy). The amylase has been known to have antifirming effect when used in bread product. Two different level of enzyme activity was used in the experiment, which are 25 and 50 units/gram of flour. The XRD spectrum showed that Taka-amylase can inhibit recrystallisation of amylose molecules as indicated by lower peaks, which showed that it has antifirming property. Addition of amylase seems to reduce the swelling of the bread. However, addition of more enzymes onto the dough can bring back the swelling to control level. Overall, the addition of amylase can improve the property of purple sweet potato composite bread.

Keywords: *antifirming, amylase, physicochemical properties, potato pasta, purple sweet, retrogradation*