



## Study of the qualitative characteristics of pan bread enriched with *moringa oleifera* seed powder

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<https://doi.org/10.59658/jkas.v11i4.2781>

<b>Received:</b> June 15, 2024	<b>Abstract</b> moringa plant seeds are an excellent source of important the scientific such as dietary fiber, protein, and antioxidants. The properties of different physiochemical compounds were investigated, as was the use of moringa seeds powder ( MSP) in pan bread manufacture. at levels 2, 4, and 6% MSP were substituted for the wheat flour to make pan bread, the pan bread that was obtained was contrasted with the control sample, the moringa-fortified bread samples were assessed for their proximate, mineral, and sensory qualities. The proximate analysis's findings indicated that moringa seed powder has a protein $33.33 \pm 88192\%$ , ash $2.83 \pm 44096\%$ , fat $27.33 \pm 1.45297\%$ and fiber $5.25 \pm 25835\%$ , while its moisture content $3 \pm 57735\%$ and carbohydrate $71.75 \pm 88039\%$ . Moringa seed powder also had important increase in the amount of minerals (calcium $1.3 \text{ mg/g}$ , potassium $0.98 \text{ mg/g}$ , and phosphorus $0.71 \text{ mg/g}$ ). According to the findings of the sensory evaluation, pan bread made with wheat flour can be successfully fortification with 2% MSP. It is possible to use MSP as a source of protein and dietary fiber when making pan bread, which is beneficial for both food and machinery.
<b>Accepted:</b> Sept. 12, 2024	
<b>Published:</b> Dec. 15, 2024	
	<b>Keywords:</b> moringa seeds, protein , pan bread, sensory evaluation , mineral.

### Introduction

Utilizing foods that not only give food to the body but have historically been useful in the prevention and treatment diseases has received a lot of attention lately, which has led to the creation of meals heavy in vegetables and the current dietary trend of consuming functional foods. and anticancer chemicals may be crucial to protecting consumers' health, given the efforts made to reduce the incidence of diseases including cancer, cardiovascular disease, and coronary heart disease, as well as to enhance health status [1].

Among them is moringa. naturally occurring food supply that is utilized to improve the functionality of new foods, 15,000 - 25,000 round seeds with a brownish-colored, semi-permeable seed crust are formed annually from a only tree. The seeds typically have typical amounts of vitamins A and E, as well as polypeptides that act as coagulants [2]. Reviewing the use of Moringa seeds in pan bread would enable the