

PHYSICO-CHEMICAL AND FUNCTIONAL PROPERTIES OF COMPOSITE FLOUR TO DEVELOP ENRICH BREAKFAST FOOD

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ABSTRACT

The present research was carried out to study the physico-chemical and functional properties of wheat flours (durum wheat semolina) and composite flours [millet & pulse flour blends, millet flour blends (flours of barnyard millet, kodo millet, little millet mixed at equally and pulse flour blends (flours of peas and lentil) mixed at equal proportion] and it is incorporated to wheat flour at different proportions such as 15%, 30% and 45%, respectively. Durum Semolina (100%) was used as control. The physico-chemical and functional properties such as color, bulk density (g/cm³), dispersibility(%), starch damage (%), water absorption capacity(%), water solubility index(%), oil absorption capacity (%), Emulsion capacity and its stability (%), foam capacity and its stability(%) were evaluated. The study was focused to determine the physico-chemical and functional properties of composite flour to develop enrich breakfast food. The flour color measurement of composite flour, which had lower whiteness L* values ranges from (83.3 to 84.8), a* redness values ranges from (0.84 to 0.98) and b* yellowness of composite flour had 15.2 to 15.7. On the other hand, the total color difference (ΔE) ranges from 14.7 to 16.1, which shows positive color effect in the sense of yellowness enhancement of composite flour. Bulk density of composite flour had 0.8(g/cm³), Dispersibility of composite flour had 60 to 61% and starch damage had 8.2 % to 9.6%. Starch molecular weight decreased during processing of flour, these changes indicate that more easily hydrolyzed during digestion. Water absorption capacity (WAC) and oil absorption capacity of composite flour had 117ml/g and 116 to 121ml/g. The solubility index of flour had 9.5% to 10.3%. The emulsion capacity (EC) and its stability of composite flour had 7.5 % to 15% and 7.5 % to 10%. The foam capacity and its stability of composite flour had 23% to 35% and 13.8% to 14.5%. This composite flour has good functional properties, which enhance the nutritional quality of the value added products

KEYWORDS: Composite Flour – Functional Properties – Composite Flour – Breakfast Food

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