

## عنوان مقاله:

Evaluation of Levels of Potassium Bromate and Some Heavy Metals in Bread and Wheat Flour Sold in Aba Metropolis, South Eastern Nigeria

## محل انتشار:

مجله سم شناسی پزشکی آسیا اقیانوسیه, دوره 8, شماره 3 (سال: 1398)

تعداد صفحات اصل مقاله: 7

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## خلاصه مقاله:

Background: 32 different brands of bread with 12 different brands of wheat-flour sold in Aba metropolis, South Eastern Nigeria were selected and evaluated for both potassium bromate and some heavy metals contents to determine their safety level of consumption. Methods: Bromate determination was carried out using spectrophotometric method while heavy metals were done by the flame atomic absorption spectrophotometer. Results: The results of the analysis revealed that all the bread samples contained potassium bromate at concentrations above the permissible limit allowed by the US FDA while the concentrations in wheat flour samples were within the acceptable limit with ranges from  $0.27 \pm 0.04$  –  $3.78 \pm 0.26$  mg/kg and  $00$  –  $1.52 \pm 0.28$  mg/kg, respectively. The values of heavy metals in bread ranged as follows: Zn ( $3.22 \pm 0.05$  –  $7.25 \pm 0.24$  mg/kg), Pb ( $0.05 \pm 0.01$  –  $0.45 \pm 0.02$  mg/kg), Mn ( $44.28 \pm 0.5$  –  $78.25 \pm 1.24$  mg/kg), Cu ( $0.31 \pm 0.04$  –  $0.49 \pm 0.12$  mg/kg) and Co ( $0.04 \pm 0.01$  –  $0.24 \pm 0.03$  mg/kg) while in wheat flour, the ranges were as follows: Zn ( $3.85 \pm 0.04$  –  $5.03 \pm 0.10$  mg/kg), Pb ( $0.06 \pm 0.02$  –  $0.15 \pm 0.04$  mg/kg), Mn ( $47.30 \pm 0.38$  –  $70.20 \pm 1.02$  mg/kg), Cu ( $0.36 \pm 0.02$  –  $0.46 \pm 0.13$  mg/kg) and Co ( $0.07 \pm 0.01$  –  $0.21 \pm 0.03$  mg/kg). Conclusion: The values of these metals are within the permissible limits except Pb and Mn which were above the normal limits that can be detrimental to human health.

## کلمات کلیدی:

Bread, Heavy metals, Potassium Bromate, Nigeria

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