

## ABSTRACT

### Urine and Blood Chromium Content in Community Who Did and Who Did Not Consume Rambak Chips

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Rambak chips (crakled water-buffalo rinds) as provisions have to comply to health standards, among others they must not be contaminated with hazardous material particularly be free from heavy metal contamination. Chromium content in rambak chips is dangerous for human health. Chromium (Cr) is a grey colored heavy metal and very difficult to be oxidized eventhough in high temperature. Chromium is stable in 3 valences' form and according to its toxicity, in chronologic order is Cr<sup>6+</sup>, Cr<sup>3+</sup>, Cr. The purpose of this study was to analyze the difference of urine and blood chromium content between community who consumed rambak chips and who did not at Kauman Village of Mojokerto regency.

This was an analytic study and carried out cross sectionally from January 1, 2004 to June 30, 2004. Kauman village was chosen as the study location for the community who consumed rambak chips, while Mejero village was ditto for those who did not consume rambak chips. Taken by simple random sampling, 60 samples constituted of 30 samples from Kauman and 30 from Mejero. Data was analyzed by independent t- test ( $\alpha=0.05$ ).

The result showed that the average of Cr content in rambak chips was 1.47 ppm. In community who consumed rambak chips, the average of blood Cr content was 0.43  $\mu\text{g/liter}$  and urine Cr content was 0.64  $\mu\text{g/liter}$ , while in community who did not consume, the average of blood Cr content was 0.06  $\mu\text{g/liter}$  and urine Cr content was 0.02  $\mu\text{g/liter}$ . The independent T-test showed  $p=0.000$ , it confirmed that there was a significant difference in blood and urine Cr content between people who consumed rambak chips and who did not. Compared to WHO (World Health Organization) standards for blood and urine Cr content (0.5  $\mu\text{g/liter}$ ), the community had a lower blood Cr content, but they had a higher urine Cr content.

It can be concluded from the study that there was an indication of Cr contamination on people who consumed rambak chips. It is suggested to producers of rambak chips to use the basic commodity for rambak chips from uncontaminated buffalo rinds, not from the waste of skin factories. Should the waste from factories be used as the basic materials for rambak chips, it must be preceded by a thorough process to remove dangerous materials.

Key words: Chromium, rambak chips, blood, urine