

Radioactive Bananas

How radioactive is a banana?

Answer

Banana is one of the beloved foods for many people and it is a great source of Potassium (K) for human. However, natural potassium contains a trace amount of radioactive isotope ^{40}K (0.0117%). The average amount of K per 100g of banana is 358mg [1]. By calculation [2], the average radioactivity per 100g of banana is 0.305nCi (nanocuries). In comparison, a dental x-ray is equivalent to around 50 bananas, while the daily background dose is around 100 bananas. The lethal dose is around 100,000,000 bananas in a single intake [3]. Therefore, we do not have to demonise radioactivity. Moreover, this is a perfect example that we should talk about the toxicity considering the amount.

References:

1. United States Department of Agriculture (USDA) Food Composition Databases, <https://ndb.nal.usda.gov/>
2. David W. Ball, *Journal of Chemical Education*, **2004**, *81* (10), 1440, DOI: 10.1021/ed081p1440
3. Dan Protopopescu, Banana Equivalent Dose, University of Glasgow, <http://www.ppe.gla.ac.uk/~protopop/teaching/NPP/P2-NPP.pdf>