

Peer Review

Review of: "Polycyclic Aromatic Hydrocarbons in Brazilian Food: A Critical Review of Levels, Human Health Risk Assessment, and Potential Gaps in the Recent Literature"

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While the manuscript is written in competent academic English, there are instances of awkward phrasing, typographical errors, and inconsistent terminology (e.g., “benzo[a] pyrene” vs. “BaP”; “carcinogenic risk” vs. “CRisk”) that could benefit from professional language editing to enhance clarity and flow. **Original:** “This complexity poses significant challenges in isolating and attributing specific carcinogenic effects to individual components.” **Suggestion:** “This complexity makes it difficult to isolate and attribute specific carcinogenic effects to individual PAH compounds.” **Original:** “Food supply chain contamination represents a primary route of human exposure to PAHs...” **Suggestion:** “Contamination of the food supply chain is one of the main routes of human exposure to PAHs...” (“Represents a primary route” is grammatically fine, but less natural in style.)

Although the PRISMA approach is referenced, the search strategy lacks a clearly presented PRISMA flowchart. Figure 1 is cited but not visible in the reviewed file. Inclusion and exclusion criteria should be more explicitly defined (e.g., how was study quality assessed? Were any studies excluded due to methodological flaws?).

The review includes a large amount of quantitative data but lacks effective data visualization. The tables are exhaustive but may overwhelm the reader. Summary graphs (e.g., risk values by food group, regional distribution of CRisk) and more concise comparative figures would enhance accessibility.

The manuscript properly discusses CRisk thresholds but tends to emphasize worst-case scenarios without adequately discussing bioavailability/bioaccessibility caveats or margin of exposure approaches,

which are gaining prominence in dietary risk assessments. The authors rightly acknowledge this late in the manuscript, but a more nuanced discussion earlier on would help balance the risk communication.

There are significant references to previously published data, and some quantitative risk estimates appear to be re-used. While this is expected in a review, it should be made clearer when estimates are recalculated versus cited directly. There is also a tendency to repeat similar findings across multiple sections.

Acronyms such as LMW/HMW, RfD, oSE, and CRisk should be defined on first use in each major section.

Some references are inconsistently cited (e.g., “Souza et al. [4]” appears several times, but full citation details are buried). Ensure reference list formatting complies with the journal’s guidelines. The conclusions could be strengthened by offering more specific regulatory recommendations (e.g., food categories that should be prioritized, suggestions for harmonization with Codex or EU regulation).

The manuscript addresses an important and underexplored area of environmental and food toxicology, with solid methodology and relevant findings. However, it would benefit significantly from language editing, visual data synthesis, clearer methodological transparency, and a more balanced risk communication strategy.

Declarations

Potential competing interests: No potential competing interests to declare.