

Revisión documental: tartrazina y sus dimensiones sanitarias y regulatorias a nivel global.

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RESUMEN

La tartrazina (E102) es un colorante amarillo ampliamente usado en alimentos procesados a nivel global, lo que ha generado preocupación por sus posibles efectos en la salud (Stevens et al., 2013). Esta investigación revisó estudios recientes y protocolos oficiales para evaluar su impacto, encontrando que la tartrazina puede causar reacciones alérgicas como urticaria, problemas respiratorios y digestivos, e incluso síntomas graves en casos extremos (Nielsen et al., 2017). Además, estudios en animales han mostrado que la exposición durante el embarazo puede afectar el desarrollo fetal, provocando bajo peso y malformaciones óseas (EFSA, 2015). A nivel internacional, las regulaciones varían: la Unión Europea exige advertencias en el etiquetado, Estados Unidos requiere informar su presencia, y países de América Latina como Colombia y Perú han adoptado normativas específicas, mientras que otros mantienen controles menos estrictos (Kullo et al., 2016). Sin embargo, la literatura científica aún presenta limitaciones, como la falta de estandarización en las dosis estudiadas y la escasez de investigaciones a largo plazo en humanos. Por ello, se destaca la importancia de fortalecer la regulación, promover estudios más completos y brindar información

clara a los consumidores para proteger la salud pública frente al uso de este colorante artificial.

Palabras clave: Tartrazina, regulaciones, colorante artificial

ABSTRACT

Tartrazine (E102) is a yellow dye widely used in processed foods worldwide, raising concerns about its potential health effects (Stevens et al., 2013). This study reviewed recent research and official protocols to assess its impact, finding that tartrazine may cause allergic reactions such as urticaria, respiratory and digestive issues, and even severe symptoms in extreme cases (Nielsen et al., 2017). Moreover, animal studies have shown that exposure during pregnancy may affect fetal development, leading to low birth weight and bone malformations (EFSA, 2015). International regulations vary: the European Union requires warning labels, the United States mandates disclosure of its presence, and Latin American countries like Colombia and Peru have adopted specific regulations, while others maintain less stringent controls (Kullo et al., 2016). However, scientific literature still presents limitations, such as lack of standardized doses in studies and a shortage of long-term human research. Therefore, strengthening regulations, promoting more comprehensive studies, and providing clear information to consumers are essential to protect public health regarding the use of this **artificial dye**.

KeyWords: Tartrazine, regulations, artificial coloring

REFERENCIAS

1. Amchova, P., Kotolova, H., & Ruda-Kucerova, J. (2015). Health safety issues of synthetic food colorants. *Regulatory Toxicology and Pharmacology: RTP*, 73(3), 914–922. <https://doi.org/10.1016/j.yrtph.2015.09.026>
2. Elhkim, M. O., Héraud, F., Bemrah, N., Gauchard, F., Lorino, T., Lambré, C., Frémy, J. M., & Poul, J.-M. (2007). New considerations regarding the risk assessment on Tartrazine. *Regulatory Toxicology and Pharmacology: RTP*, 47(3), 308–316. <https://doi.org/10.1016/j.yrtph.2006.11.004>
3. Mpountoukas, P., Pantazaki, A., Kostareli, E., Christodoulou, P., Kareli, D., Poliliou, S., Mourelatos, C., Lambropoulou, V., & Lialiaris, T. (2010). Cytogenetic evaluation and DNA interaction studies of the food colorants amaranth, erythrosine and tartrazine. *Food and Chemical Toxicology: An*

International Journal Published for the British Industrial Biological
Research Association, 48(10), 2934–2944.

<https://doi.org/10.1016/j.fct.2010.07.030>

4. Nettis, E., Colanardi, M. C., Ferrannini, A., & Tursi, A. (2003). Suspected tartrazine-induced acute urticaria/angioedema is only rarely reproducible by oral rechallenge. *Clinical and Experimental Allergy: Journal of the British Society for Allergy and Clinical Immunology*, 33(12), 1725–1729. <https://doi.org/10.1111/j.1365-2222.2003.01825.x>
5. Saloglu, D., & Sahin, O. I. (2021). Removal of azo dyes – tartrazine, carmoisine, and Allura Red – from wastewater using Spirulina biomass-immobilized alginate beads: equilibrium, kinetics, thermodynamics, desorption, and reusability. *Desalination and Water Treatment*, 220, 431–445. <https://doi.org/10.5004/dwt.2021.27010>.
6. Moutinho, I. L. D., Bertges, L. C., & Assis, R. V. C. (2007). Prolonged use of the food dye tartrazine (FD&C yellow no 5) and its effects on the gastric mucosa of Wistar rats. *Brazilian Journal of Biology = Revista Brasileira de Biologia*, 67(1), 141–145. <https://doi.org/10.1590/s1519-69842007000100019>
7. Mekkawy, H. A., Ali, M. O., & El-Zawahry, A. M. (1998). Toxic effect of synthetic and natural food dyes on renal and hepatic functions in rats. *Toxicology Letters*, 95, 155. [https://doi.org/10.1016/s0378-4274\(98\)80621-8](https://doi.org/10.1016/s0378-4274(98)80621-8)