**Mineral Fortification of Salt**

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| **Abstract**  Mineral-enriched salts go beyond their traditional role as flavor enhancers, offering the potential to deliver essential minerals that support human health. These salts contain not only sodium chloride but also beneficial minerals such as iodine, potassium, magnesium, zinc, and calcium, which are crucial for addressing mineral deficiencies in populations. Salt, historically significant in various cultures for its preservative and health-related properties, has also been associated with health risks, particularly when consumed in excess. Excessive salt intake can lead to hypertension and cardiovascular diseases, which have spurred the development of reduced-sodium and mineral-enriched salts as alternatives to improve public health.  Iodine is one of the most commonly added minerals to salt due to its importance in thyroid function. Iodine deficiency can lead to conditions like goiter, and iodized salt has proven effective in mitigating this issue on a global scale. Potassium, another essential mineral, plays a crucial role in regulating blood pressure, balancing sodium intake, and supporting heart health. Potassium-enriched salts provide an alternative for individuals at risk of hypertension, offering a natural way to balance sodium intake and promote cardiovascular wellness. Magnesium, vital for muscle function, nerve transmission, and immune health, is also a key mineral added to salt to enhance its health benefits. Zinc, known for its role in immune function, wound healing, and cellular growth, further strengthens the health profile of mineral-enriched salts.  The production of mineral-enriched salts involves integrating these minerals into the salt matrix while ensuring their stability and bioavailability. This process requires overcoming challenges such as ensuring the uniform distribution of minerals and stabilizing their presence over time. Potassium chloride, for instance, can impart a bitter taste that affects consumer acceptance. To address this, flavor enhancers and taste modifiers are often incorporated to make these salts more palatable.  Consumer acceptance of mineral-enriched salts is largely driven by growing awareness of their health benefits. However, the widespread adoption of these products faces hurdles, including issues related to product stability, shelf life, and cost. Future advancements in production techniques, as well as educational initiatives to increase public awareness of the health benefits, could significantly improve the reach and impact of mineral-enriched salts, particularly in developing regions where mineral deficiencies are more prevalent. These salts present a promising solution to improving public health and reducing the prevalence of mineral deficiencies on a global scale.  **References:**  [1] Sultan, S., Anjum, F. M., Butt, M. S., Huma, N., & Suleria, H. A. R. (2014). Concept of double salt fortification; a tool to curtail micronutrient deficiencies and improve human health status. Journal of the Science of Food and Agriculture, 94(14), 2830-2838.  [2] Hurrell, R. F. (2021). Iron fortification practices and implications for iron addition to salt. The Journal of nutrition, 151, 3S-14S.  [3] Zimmermann, M. B., Wegmueller, R., Zeder, C., Chaouki, N., Rohner, F., Saïssi, M., ... & Hurrell, R. F. (2004). Dual fortification of salt with iodine and micronized ferric pyrophosphate: a randomized, double-blind, controlled trial. The American journal of clinical nutrition, 80(4), 952-959.  [4] McGee, E. J. T., Sangakkara, A. R., & Diosady, L. L. (2017). Double fortification of salt with folic acid and iodine. Journal of Food Engineering, 198, 72-80.  [5] Biebinger, R., Hurrell, R. F., & Ottaway, P. (2008). 3—Vitamin and mineral fortification of foods. Food Fortification and Supplementation; Ottaway, PB, Ed.; Woodhead Publishing: Cambridge, UK, 27-40. |

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