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Silver Nanoparticle Application in Food Packaging and Impacts on Food Safety and Consumer's Health

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Abstract : Silver nanoparticles are silver metal with a size of 1-100nm. The most common source of silver nanoparticles is inorganic salts. Nanoparticles can be ingested through our foods and constitute nanoparticles and silver ions, whether as an additive or by migrants and, in some cases, as a pollutant. Silver nanoparticles are the most widely applicable engineered nanomaterials, especially for antimicrobial function. Ag nanoparticles give different advantages in the case of food safety, quality, and overall acceptability; however, they affect the health of humans and animals, putting them at risk of health problems and environmental pollution. Silver nanoparticles have been used widely in food packaging technologies, especially in water treatments, meat and meat products, fruit, and many other food products. This is for bio-preservation from food products. The primary goal of this review is to determine the safety and health impact of Ag nanoparticles application in food packaging and analysis of the human organs more affected by this preservative technology, to assess the implications of a nanoparticle on food safety, to determine the effects of nanoparticles on consumers health and to determine the impact of nanotechnology on product acceptability. But currently, much research has demonstrated that there is cause to believe that silver nanoparticles may have toxicological effects on biological organs and systems. The silver nanoparticles affect DNA expression, gastrointestinal barriers, lungs, and other breathing organs illness. Silver particles and molecules are very toxic. During its application in food packaging, food industries used the thinnest particle. This particle can potentially affect the gastrointestinal tracts-it suffers from mucus production, DNA, lungs, and other breezing organs. This review is targeted to demonstrate the knowledge gap that industrials use in the application of silver nanoparticles in food packaging and preservation and its health effects on the consumer.

Keywords : food preservatives, health impact, nanoparticle, silver nanoparticle
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