

ABSTRACT

Natural contamination of agricultural products like crops (red chilies, peanuts, pistachio, walnut, rice, corn, cottonseed, and wheat) by various fungi and their metabolites, may occur at pre and post-harvest levels. Ten thousand Mycotoxins have been known that are produced by various fungi but the metabolites of the genus Aspergillus called aflatoxins are well known due to their most toxic potential. Among the twenty identified types of aflatoxins four types B1 (AFB₁), B2 (AFB₂), G1 (AFG₁), and G2 (AFG₂) are well known due to carcinogenic potential. It is a very difficult task to inhibit their growth from food and feed products to get rid from the exposure of aflatoxins. In this current study the process of inhibition was employed for this purpose and natural materials with their modified surface was used as antifungal agents. This method was found to be very beneficial and effective for the inhibition of Aflatoxigenic A. flavus from agricultural commodities. This method of inhibition of growth of A. flavus being cost effective and economical to preserved food and feed products before its consumption. In this research work, Fe/Mg nanoparticles was prepared by using leaf extract of Azadirachta indica. Optimum conditions for efficient inhibition of A. flavus was initial concentration 5mg/mL while dose rate for both of these was 15 and 20mg/mL. For the characterization of synthesized Fe/Mg nanoparticles Ultraviolet spectroscopy, Scanning electron microscopy, energy-dispersive X-ray spectroscopy and Fourier-transform infrared spectroscopy were used. Statistical analysis was done by calculating standards errors at 0.05 level of significance.