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Aflatoxins Characterization in Remedial Plant-Delphinium denudatum by High-Performance Liquid Chromatography–Tandem Mass Spectrometry

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Abstract : Introduction: The objective of the projected work is to study the occurrence of the aflatoxins B1, B2, G1and G2 in remedial plants, exclusively in Delphinium denudatum. The aflatoxins were analysed by high-performance liquid chromatography–tandem quadrupole mass spectrometry with electrospray ionization (HPLC–MS/MS) and immunoaffinity column chromatography were used for extraction and purification of aflatoxins. PDA media was selected for fungal count. Results: A good quality linear relationship was originated for AFB1, AFB2, AFG1 and AFG2 at 1–10 ppb ($r > 0.9995$). The analyte precision at three different spiking levels was 88.7–109.1 %, by means of low per cent relative standard deviations in each case. Within 5 to7 min aflatoxins can be separated using an Agilent XDB C18-column. We found that AFB1 and AFB2 were not found in D. denudatum. This was reliable through exceptionally low figures of fungal colonies observed after 6 hr of incubation. The developed analytical method is straightforward, be successfully used to determine the aflatoxins. Conclusion: The developed analytical method is straightforward, simple, accurate, economical and can be successfully used to find out the aflatoxins in remedial plants and consequently to have power over the quality of products. The presence of aflatoxin in the plant extracts was interrelated to the least fungal load in the remedial plants examined.

Keywords : aflatoxins, delphinium denudatum, liquid chromatography, mass spectrometry
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