ABSTRACT

Mycotoxins are the natural toxic substances in foodstuffs and feedstuffs. Contamination of those mycotoxins with foodstuffs and feedstuffs may cause various hazards to human health and his animal. However, aflatoxin is the major and critical mycotoxin compound in the world. When exporting and importing the food and feed, the free or acceptable level of aflatoxin is important. There are few types of aflatoxins; but most critical and toxic type is aflatoxin B_1. Aflatoxin B_1 causes to many diseases to human and lowers the animal production. Some of those diseases are mutagenic, carcinogenic, teratogenic, hallucinogenic, emetic and oestrogenic. By applying prevention and controlling measures of aflatoxin B_1 to foodstuffs and feedstuffs, can be controlled to the acceptable level.

This research was carried out to find the quantitative determination of aflatoxin B_1 in several major foodstuffs. There are various steps are involved to analyze aflatoxin. They are sampling, extraction, extract clean up, concentration, separation of extract components, detection, determination and confirmation of identity. Thin Layer Chromatography (TLC) visual estimation is the mostly use detection method. For this, methods has been improved by Association of Analytical Chemist (AOAC) to achieve optimal extraction of aflatoxin B_1, and called AOAC (CB) method.

R_f value and the retention time of the compound are specific to one compound. In TLC, R_f values are calculated and it was varied from plate to plate. Various factors are effected to this variation of R_f. The R_f of co-spotting and standard spotting has no significant different at 05% level. When handling High Performance Liquid Chromatography (HPLC), more reproducibility, selectivity, sensitivity and lower assay time are attributed, but HPLC needs more capital cost than TLC and TLC densitometry and high level of expertise.