

AFLATOXIN CONTAMINATION IN PULSES FROM TRIBAL AREAS OF MEDAK DISTRICT, ANDHRA PRADESH

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THE occurrence of aflatoxins in food and feed and its deleterious effects on human¹ and animal health² have been reported from several parts of the world. Considerable work has been done on the incidence of aflatoxins and other mycotoxins in cereals and oil seeds but information regarding contamination of pulses with aflatoxins is meagre³. This investigation attempts to detect the contamination of aflatoxins in two protein-rich pulses viz Cowpea (*Vigna sinensis* Endl.) and horse gram (*Dolichos biflorus* L.). These form the staple food of tribals and also used as cattle feed.

Fifty six samples of cowpea and horse gram were collected from the tribal areas of several villages from Medak district. All the samples collected were observed under long wave UV light (360 nm) for bright greenish-yellow fluorescence test⁴. This test gives a tentative idea in picking up the toxin suspected samples⁵. The samples which gave BGY fluorescence were extracted for aflatoxins by the standard method⁶. Qualitative and quantitative estimations of aflatoxins were carried out by comparing with those of standards.

Out of the 30 samples of cowpea and 26 samples of horse gram 21 and 14 samples respectively gave BGY fluorescence (table 1).

When the BGY positive samples were extracted for aflatoxins and subjected to TLC, 15 of the cowpea and 8 of the horse gram were positive to one or more of the aflatoxins. Of all these samples, 15 were positive only to aflatoxin B₁ and 11 for aflatoxin B₂. Samples positive to both aflatoxins B₁ and B₂, B₁ and G₁ and B₂ and G₁ were 10, 5 and 3 respectively. None of the samples was

positive to only G₁. Aflatoxin G₂ only could not be detected. The level of aflatoxin contamination in these pulses ranged from traces to 135 ppb. Among all the toxin contaminated samples 60% of cowpea and 33% of horse gram were above the tolerance level i.e. 30 ppb⁷. The highest concentration of the toxin (aflatoxin B₁) was detected in cowpea (135 ppb) and the lowest (aflatoxin G₁) in horse gram (8 ppb).

Aflatoxin contaminated food is consumed among the tribals due to lack of knowledge and awareness and also for want of alternative source of such inexpensive food. Despite the fact that appreciable amounts of aflatoxins will be minimised during the process of cooking⁸, considerable quantities may still remain to cause harmful effects on human health.

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TABLE 1

Incidence of aflatoxin in cowpea and horse gram.

Seeds	No. of samples			No. of samples + ve for aflatoxin					
		Assayed BGY + ve	+ ve to aflatoxin	B ₁	B ₂	G ₁	B ₁ & B ₂	B ₁ & G ₁	B ₂ & G ₂
Cowpea	30	21	15	10	7	3	7	3	1
Horsegram	26	14	8	5	4	2	3	2	2