Central Food Technological Research Institute
Mysore-570 020

Kit for the detection of aflatoxins by improved dot-Elisa technique (Immuno- DOT- ELISA kit for aflatoxin detection)

1. Introduction:

Aflatoxin contamination of food and feed has gained global significance which has led to the enforcement of various legislations. The meaningful implementation of these strategies of this legislation is limited by non- availability of simple cost- effective method of screening and detection of aflatoxin under field conditions. Keeping in mind the analytical constraints in developing countries, a simple-to-operate, rapid, reliable and cost-effective portable aflatoxin kit has been developed at the Institute.

Product Specification:

a. To perform analysis of 7 samples per Immuno-afla kit
b. Sensitivity of detection range 5-10 pg per slot
c. Stable for 6 months at 0^0 to 4^0 C
d. Testing time 15-20 min
e. Detection limit 5-20 ppb

2. Raw material:

Nitrocellulose membrane, modified blocking agent, sample suspected with aflatoxin contamination, antibody, amplifying agents, wash buffer, substrate for colour development, small plastic vials/ tubes, box.

3. Plant and machinery:

Poultry shed, centrifuge, magnetic stirrer, pipetman.

4. Process in brief:

Pretreated nitrocellulose membrane ⟶ Coat with anti- aflatoxin (IgY) ⟶ Dry ⟶ Block ⟶ Dry ⟶ Sample ⟶ Conjugate ⟶ Wash ⟶ Amplifying solution I ⟶ Wash ⟶ Amplifying solution II ⟶ Wash ⟶ Chromogen ⟶ Dark ⟶ Distilled water ⟶ Observe.

5. **Project Cost – Fixed Cost – Working Capital (in Rs. '000)**
(Estimate for a model project)

Sl. No	Components	Amount in (Rs. '000)
1.	Land	250
2.	Building	250
3.	Plant & Machinery	774
4.	Auxiliary Equipments	75
5.	Other fixed assets	60
6.	Preliminary & preoperative expenses	206
7.	Working capital margin	385
	Total project cost	**2000**

6. **Production capacity:** 20, 000 kits/ annum

Approximate cost of production per kit: Rs. 200

Approximate cost of sales per kit: Rs. 300

Return per kit @ Rs.100 for 20000 kits per annum: Rs. 20 Lakhs

7. Technology availability:

The technology for the assembling of the immuno- aflakit kit has been developed at Central Food Technological Research Institute, Mysore, using appropriate techniques and chemicals of right quality. The institute has the necessary expertise to provide technical assistance and guidance for implementation under technical consultancy arrangements.