# Central Food Technological Research Institute
**Mysore-570 020**

# Kit for the detection of deoxynivalenol (DON) by improved dot-Elisa technique
# (Immuno- DOT- ELISA kit for deoxynivalenol [DON] detection)

## 1. Introduction:

Deoxyvalenol (DON) contamination of food and feed, which is produced by *Fusarium spp*. 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 DON under field conditions. Keeping in mind the analytical constraints in developing countries, a simple-to-operate, rapid, reliable and cost-effective portable DON detection kit has been developed at the Institute.

**Product Specification:**

a. To perform analysis of 7 samples per Immuno-don kit
b. Sensitivity of detection range 1000-10 ng per slot
c. Stable for 6 months at $0^0$ to $4^0$ C
d. Testing time 15-20 min
e. Detection limit 100-10 ppb

## 2. Raw material:

Nitrocellulose membrane, modified blocking agent, sample suspected with DON 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-DON (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- DON 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.